



Bristol-Myers Squibb Manufacturing Company

***RCRA Corrective Action Program
Quarterly Progress Report No. 66
1st Quarter 2017***

***Bristol-Myers Squibb Manufacturing Company
Humacao, Puerto Rico***

April 2017



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1.0 *Introduction*

Bristol-Myers Squibb Manufacturing Company (BMSMC) is currently implementing a Resource Conservation and Recovery Act (RCRA) Corrective Action Program at its pharmaceutical manufacturing facility located in Humacao, Puerto Rico. The program is being conducted in accordance with the provisions of Module III of BMSMC's Final RCRA Hazardous Waste Treatment and Storage Permit No. PRD090021056.

This quarterly progress report has been prepared in accordance with the provisions of Module III, Condition B.8 (a) of the Permit. The report covers the period January 1, 2017 through March 31, 2017. All available information required by Condition B.8 (a)(i) through (viii) is provided below.¹

The RCRA Corrective Action Program addresses three solid waste management units (SWMUs) at which impacts to soil and/or groundwater have been detected. The status of the corrective action program at each SWMU is briefly described below.

1.1. *Former Underground Tank Farm (SWMU #3)*

The Former Tank Farm (FTF) area consisted of 26 underground storage tanks for the storage of raw materials, kerosene and spent solvents for reclamation. BMSMC submitted a Corrective Measure Study (CMS) Report to United States Environmental Protection Agency (USEPA) in June 2007 that documented the improving groundwater quality and provided recommendations for the Final Corrective Measure. An updated CMS report was submitted to the USEPA in July 2011.

BMSMC conducted quarterly groundwater sampling at seven wells at this SWMU from March 2000 to December 2010 as part of the site-wide monitoring program. On March 12, 2010 BMSMC submitted a request for a permit modification to reduce the groundwater monitoring program. Based on USEPA comments, BMSMC submitted a revised request for a permit modification to the USEPA on July 20, 2010. BMSMC received approval for the permit modification from the USEPA on December 29, 2010. The reduction in groundwater monitoring as detailed in the permit modification was initiated during the March 2011 groundwater sampling event. As per the permit modification, monitoring wells at SWMU #3 are sampled semiannually. Semiannual sampling started with the March 2011 sampling event.

Monitoring wells MW-17 and MW-18, installed during the 2011 Supplemental Field Investigation, were sampled on a voluntary basis from June 2011 to June 2012. A request to

¹ A PDF version of the complete Quarterly Progress Report No. 66 including cover letter, text, tables, figures, and appendices is provided on the back cover of this document.

include monitoring wells MW-17 and MW-18 into the SWMU #3 groundwater monitoring network was included in the Class 2 Permit Modification Request filed with the USEPA on May 16, 2012. On August 14, 2012, BMSMC received approval for the Class 2 Permit Modification incorporating monitoring wells MW-17 and MW-18 into the groundwater monitoring network. Monitoring wells MW-17 and MW-18 were incorporated into the groundwater-monitoring network beginning with the September 2012 groundwater sampling event.

A new monitoring well, MW-19, was installed in the Former Underground Tank Farm Area during the Release Assessment Phase 1 Field Program. Installation of this well was proposed by BMSMC in the July 2015 response to USEPA Comments on the 2011 CMS.

1.2. *Former Brule Incinerator (SWMU #9)*

This SWMU is the site of a former hazardous waste incinerator. The interim corrective measure (ICM) consisted of excavation of petroleum impacted soil. The *Interim Corrective Measure Implementation Report* was submitted to USEPA in February 2002. This report was approved by USEPA in a letter dated March 28, 2002.

A new monitoring well, BR-4, was installed in the Brule area during the Release Assessment Phase 1 Field Program. Installation of this well was proposed by BMSMC in the July 2015 Response to USEPA Comments on the 2011 CMS.

1.3. *Building 5 Area (SWMU #20)*

This SWMU encompasses an area adjacent to and east of Building 5. BMSMC submitted a revised CMS Report to USEPA in June 2007 that provided recommendations for the Final Corrective Measure. The recommended corrective measure included a combination of source area excavation and Monitored Natural Attenuation (MNA). An updated CMS report was submitted to the USEPA in July 2011.

BMSMC implemented an Interim Corrective Measure (ICM) to address source area soils in the Building 5 Area. The ICM Work Plan, which included four phases of excavation, treatment, and reuse or offsite disposal of impacted soil, was submitted to USEPA in September 2003 and approved by USEPA in December 2004. Four phases of soil excavation and treatment were conducted between 2006 and 2011 during which approximately 7,400 cubic yards of soil was excavated and treated. Each of the excavation areas (Phase 1 through Phase 4; designated as Areas A through D) are shown on **Figure 1**.

On August 14, 2012, BMSMC received approval for a Class 2 Permit Modification for Temporary Authorization to operate a temporary unit (TU) for the ex-situ treatment of contaminated soil excavated from Area E and the remaining unexcavated soil from Area D that was left in place during the ICM. In addition, the USEPA approved the May 2012 *Temporary*

Unit Operations and Maintenance Plan (O&M Plan) and the May 2012 *Building 5 Area Interim Corrective Measure Work Plan Area E*. Area E ICM soil removal activities were conducted from February 6, 2013 through March 2, 2013. Approximately 1,728 cubic yards of impacted soil were removed and placed into the Biopile for treatment. The Area E excavation area is shown on **Figure 1**.

BMSMC conducted quarterly groundwater sampling at the SWMU #20 from March 2000 to December 2010 as part of the site-wide monitoring program. As per the December 2010 approved permit modification, BMSMC initiated a reduced groundwater monitoring program in March 2011. The reduced groundwater monitoring program includes quarterly sampling at seven wells and semiannual sampling at 13 wells. Semiannual sampling was initiated in March 2011. Semiannual samples are collected in March and September.

On August 14, 2012, BMSMC received approval for the Class 2 Permit Modification to reactivate monitoring well D-1. Semiannual sampling of monitoring well D-1 was initiated in September 2012.

On March 13, 2013, BMSMC received conditional approval of the Class 2 Permit Modification Request for the closure of three existing monitoring wells (G-1R2, D-1, and E-1) and the installation of three replacement monitoring wells (G-1R3, D-1R, and E-1R). Conditional approval of the Class 2 Modification Request was granted pending a determination that replacement well G-1R3 complies with the objectives of the groundwater monitoring program and effectively captures the Building 5 COCs.

On September 18, 2013, BMSMC, in response to the conditional approval of the March 13, 2013 Class 2 Permit Modification Request, submitted a technical memorandum to the USEPA demonstrating the effectiveness and adequacy of the replacement monitoring wells D-1R, E-1R, and G-1R3 to capture the Building 5 COCs.

On May 5, 2014, BMSMC submitted a Class 1 Permit Modification requesting an extension of 45 days to remove hazardous soil, and the remaining non-hazardous soil that met the cleanup criteria as provided in BMSMC Permit Temporary Unit Operations and Maintenance Plan, beyond the previously permitted 90 day removal period.

On June 19, 2014, BMSMC received final approval of the Class 2 Permit Modification Request for the closure of three existing monitoring wells (G-1R2, D-1, and E-1) and the installation of three replacement monitoring wells (G-1R3, D-1R, and E-1R).

On November 14, 2014, BMSMC received conditional approval of the *Building 5 Soil Vapor Investigation Work Plan*. The Work Plan was conditionally approved by the USEPA pending the receipt of a revised work plan that addressed minor comments within 45 days of the approval letter. The revised Work Plan was submitted to the USEPA on December 4, 2014.

On February 23, 2015, BMSMC received Comments on the Building 5 Area Source Removal Phase 5 Implementation Report from the USEPA. The comment letter stated that BMSMC must submit a revised *Building 5 Area Source Removal Phase 5 Implementation Report* within 45 days of February 23, 2015. The revised *Building 5 Area Source Removal Phase 5 Implementation Report* was submitted to the USEPA on April 8, 2015.

A new monitoring well pair, S-39S/S-39D, and a deep monitoring S-35D paired with existing shallow monitoring well S-35S, were installed in the Building 5 Area during the Release Assessment Phase 1 Field Program. Installation of these wells was proposed by BMSMC in the March 2016 *Release Assessment Sampling and Analysis Plan*.²

1.4. Site-Wide

On March 14, 2013, BMSMC received the approved USEPA RCRA Permit Application Technical and Administrative Completeness Determination Letter for the May 2010 RCRA Part B Permit Application.

On February 26, 2015, BMSMC received Comments on the Corrective Measures Study Report (July 2011) from the USEPA. In the comment letter, the USEPA stated that BMSMC must submit a revised *Corrective Measures Study Report* within 60 days of February 26, 2015.

On June 3, 2015, BMSMC received a letter from the USEPA that granted a time extension to respond to the Comments on the Corrective Measures Study. In the time extension letter, the USEPA granted a time extension until July 24, 2015 for the submittal of a revised *Corrective Measures Study Report*.

On July 22, 2015, BMSMC submitted the *Response to USEPA Comments on July 2011 CMS Report* to the USEPA. The Response to USEPA Comments proposed additional work in each of the three SWMUs (FTF, Brule, and Building 5 Areas) to address USEPA comments on the July 2011 CMS.

On January 27, 2016, BMSMC submitted a Release Notification Letter to the USEPA that identified certain constituents present in groundwater that are currently not included under the Corrective Action Program.

On February 26, 2016, BMSMC submitted a *Release Assessment Report* to the USEPA that identified specific constituents as new compounds of potential concern (COPCs) in the site's SWMUs.

² In the July 2015 Response to USEPA Comments on the 2011 CMS, this location was initially targeted for a direct push soil boring only.

On March 25, 2016, BMSMC submitted a *Release Assessment Sampling and Analysis Plan*, including an updated *Quality Assurance Project Plan* (QAPP), to complete an onsite groundwater and soil investigation to evaluate potential release(s) of COPCs.

On June 14, 2016, BMSMC submitted a *Release Assessment Phase 2A Sampling and Analysis Plan: Offsite Groundwater – South of Facility*, including an updated QAPP, to complete a groundwater investigation to evaluate the potential offsite migration of COPCs in groundwater to the south and southeast of the BMSMC facility.

On August 5, 2016, BMSMC submitted a *Preliminary Notification of Possible Offsite Groundwater Contamination* in accordance with Module III.B.10a of the Facility RCRA Part B Permit. The Preliminary Notification letter identified the possible offsite migration of low levels of COPCs that exceed background levels under the Ciudad Cristiana community.

On September 7, 2016, BMSMC submitted the *Release Assessment Phase 1 Technical Memorandum* to the USEPA, which presented the findings of the completed Phase 1 groundwater and soil investigation.

On September 7, 2016, BMSMC submitted the *Supplemental Vapor Intrusion Investigation Report Buildings 7, 8, 15, 18, 30, 42* to the USEPA, which presented the findings of the completed vapor intrusion investigations at Buildings 7, 8, 15, 18, 30, and 42.

On September 9, 2016, BMSMC submitted a *Notification of Possible Offsite Groundwater Contamination* in accordance with Module III.B.10.a of the Facility RCRA Part B Permit. The Notification letter confirmed the offsite migration of low levels of COPCs that exceed background levels under the Ciudad Cristiana residential community.

On September 22, 2016, BMSMC received comments from the USEPA and the Puerto Rico Environmental Quality Board (PREQB) on the March 2016 *Release Assessment Sampling and Analysis Plan* and the June 2016 *Release Assessment Phase 2A Sampling and Analysis Plan: Offsite Groundwater – South of Facility*.

- On October 3, 2016, BMSMC requested a 30-day time extension to respond to comments on the *Technical Review of March 2016 Release Assessment Sampling and Analysis Plan* and the *June 2016 Release Assessment Phase 2A Sampling and Analysis Plan: Offsite Groundwater – South of Facility*.
- On October 27, 2016, USEPA granted BMSMC an extension for the submittal of the Response to Comments to November 21, 2016.
- On November 21, 2016, BMSMC submitted the *Response to Technical Review of March 2016 Release Assessment Sampling and Analysis Plan* and the *June 2016*

Release Assessment Phase 2A Sampling and Analysis Plan: Offsite Groundwater – South of Facility to the USEPA and PREQB. Attachment 1 contained BMSMC's *Response to EPA Comments on the March 2016 Release Assessment Sampling and Analysis Plan.* Attachment 2 contained BMSMC's *Response to EPA Comments on June 2016 Release Assessment Phase 2A Sampling and Analysis Plan: Offsite Groundwater – South of Facility.*

- On November 21, 2016, BMSMC submitted the *Technical Memorandum Proposed Sampling Program Offsite Groundwater – South of Facility* to the USEPA. This document specifically addressed the USEPA's comments on the *June 2016 Release Assessment Phase 2A Sampling and Analysis Plan: Offsite Groundwater – South of Facility* regarding the reduced target analyte list for offsite monitoring wells installed during the Phase 2A Field Program.

On September 22, 2016, BMSMC received comments from the USEPA on the *February 2016 Release Assessment Report.*

- In the October 3, 2016 extension request noted above, BMSMC requested a 30-day time extension to respond to the September 22, 2016 USEPA comments on the *February 2016 Release Assessment Report.* As noted above the USEPA granted BMSMC an extension for the submittal of the Response to Comments to November 21, 2016.
- On November 21, 2016, BMSMC submitted the Final Release Assessment Report to the USEPA. The *Final Release Assessment Report* included BMSMC's Responses to Comments to the *February 2016 Release Assessment Report* as Attachment A.

On September 22, 2016, BMSMC received notification that BMSMC's *2015 Hazardous Waste Minimization Plan* was found to be in accordance with the Facility RCRA Part B Permit.

On October 17, 2016, BMSMC submitted the *Release Assessment, Phase 2A:Offsite Groundwater – South of Facility Technical Memorandum* to the USEPA. The Phase 2A Technical Memorandum presented the findings of the completed Phase 2A groundwater investigation.

On November 2, 2016, BMSMC received comments from the USEPA on the *RCRA Corrective Action Program Quarterly Progress Report No. 62, 1st Quarter 2016.*

- On December 16, 2016, BMSMC submitted the *Response to EPA Comments on the RCRA Corrective Action Program Quarterly Progress Report No. 62, 1st Quarter 2016* to the USEPA.

- On March 16, 2017, BMSMC received an acceptance for the December 2016 *Response to EPA Comments on the RCRA Corrective Action Program Quarterly Progress Report No. 62, 1st Quarter 2016* from the USEPA and PREQB.

On January 6, 2017, BMSMC submitted the *Onsite Surface Soil Sampling Plan*, including updated QAPP worksheets to evaluate potential impacts to surface soil associated with the Former Tank Farm Area, Former Brule Incinerator Area, and Building 5 Area. The collection of background surface soil samples was also proposed in the *Onsite Surface Soil Sampling Plan*.

On January 16, 2017, BMSMC submitted the *Phase 2C Release Assessment Potential Preferential Pathway Evaluation Sampling and Analysis Plan* to determine if the bedding material of subsurface utilities located downgradient of the facility are acting as potential preferential pathways for contaminant transport. In addition, the *Phase 2C Release Assessment Potential Preferential Pathway Evaluation Sampling and Analysis Plan* proposed the installation of test pits and additional monitoring wells to delineate the extent of 1,4-Dioxane impacts in groundwater adjacent to subsurface utilities located along State Road No. 3.

On January 13, 2017, BMSMC submitted the *Release Assessment Investigation Treatability Testing Work Plan* to undertake pre-design data collection to support evaluation of potential remedial technologies for preventing downgradient migration of COPCs.

On February 13, 2017, BMSMC submitted the December 2016 offsite groundwater laboratory technical reports and data validation reports (Release Assessment Phase 2A) to the USEPA.

On March 16, 2017, BMSMC received comments from the USEPA on the following submittals:

- *RCRA Corrective Action Program Quarterly Progress Report No. 63, 2nd Quarter 2016*;
- *Release Assessment Phase 1 Technical Memorandum*, September 2016; and
- *Technical Memorandum Proposed Sampling Program Offsite Groundwater – South of Facility*, November 2016.

2.0 Description of Work Completed

A description of corrective action activities completed between January 1, 2017 and March 31, 2017 is presented in this section.

2.1. Site-Wide

2.1.1. Groundwater Elevation Monitoring

Groundwater elevations were collected on January 30, 2017 and February 27, 2017.

Groundwater elevations measured on January 30, 2017 were collected as part of the monthly groundwater elevation monitoring at each offsite monitoring well and each onsite perimeter monitoring well. Groundwater elevations measured on February 27, 2017 were collected as part of the 1st Quarter 2017 groundwater sampling event and included all onsite and offsite monitoring wells.

Results of the groundwater elevation monitoring, including historical data beginning in July 2016, are provided in **Table 1**.

2.1.2. Vapor Intrusion Program

Vapor Intrusion sampling was conducted in January 2017 in Buildings 8, 13, 15, 18 and 30. Specific vapor intrusion samples collected in each building included:

- Building 8: Two indoor air samples, including one duplicate sample and two co-located sub-slab soil gas samples, including one duplicate sample, and one ambient air sample. The approximate location of the Building 8 co-located sub-slab soil gas and indoor air samples as well as the ambient air sample are illustrated on **Figure 2**.
- Building 13: Four indoor air samples, including one duplicate sample and four co-located sub-slab soil gas samples, including one duplicate sample, and one ambient air sample.³ The approximate location of the Building 13 co-located sub-slab soil gas and indoor air samples as well as the ambient air sample are illustrated on **Figure 3**.
- Building 15: Two indoor air samples, including one duplicate sample and two co-located sub-slab soil gas samples, including one duplicate sample, and one ambient

³ Indoor air samples were concurrently collected in Building 13 and Building 15. One common ambient air sample (B1315AA) was collected during the Building 13 and Building 15 indoor air sampling to be representative of ambient/upwind conditions for both buildings.

air sample.⁴ The approximate location of the Building 15 co-located sub-slab soil gas and indoor air samples as well as the ambient air sample are illustrated on **Figure 4**.

- Building 18: Six indoor air samples, including one duplicate sample and six co-located sub-slab soil gas samples, including one duplicate sample, and one ambient air sample.⁵ The approximate location of the Building 18 co-located sub-slab soil gas and indoor air samples as well as the ambient air sample are illustrated on **Figure 5**.
- Building 30: Six indoor air samples, including one duplicate sample, and one ambient air sample.⁶ The approximate location of the Building 30 indoor air samples as well as the ambient air sample are illustrated on **Figure 6**.

The January 2017 vapor intrusion sampling was conducted in accordance with the methods outlined in the USEPA approved December 2014 *Building 5 Soil Vapor Intrusion Work Plan*. All samples were analyzed for VOCs according to USEPA Compendium Method TO-15, naphthalene according to USEPA Compendium Method TO-17, and methane according to ASTM D-1946. Sample results were validated according to USEPA Region 2 guidelines. Laboratory analytical results and data validation reports for the January 2017 vapor intrusion samples are provided on CD in **Attachment A**.

2.1.3. Release Assessment Phase 1 Program

Results of the 4th Q 2016 groundwater samples collected from monitoring wells installed during the Release Assessment Phase 1 Field Program were validated in accordance with USEPA Region 2 guidelines. Phase 1 Release Assessment monitoring well locations are shown on **Figure 7**. The laboratory analytical results and data validation reports are provided on CD in **Attachment B**. Field data sheets are included on CD in **Attachment C**.

The 1st Q 2017 groundwater sampling event was conducted in March 2017. This was an expanded groundwater sampling event and included each of the new monitoring wells installed during the Phase 1 Release Assessment Field Program (MW-21S, MW-22S, MW-23S, RA-10S, RA-10D, MW-20D, MW-20S, S-40D, S-40S, S-41D, S-41S, S-42D, S-42S, S-43D, and S-43S). Groundwater samples were analyzed for the following parameters:

- Target compound list (TCL) Volatile Organic Compounds (VOCs) plus Tetrahydrofuran, p-Isopropyl Toluene, 1,2,4-Trimethylbenzene, 1,3-Butadiene,

⁴ See Footnote No. 3.

⁵ Indoor air samples were concurrently collected in Building 18 and Building 30. One common ambient air sample (B1830AA) was collected during the Building 18 and Building 30 indoor air sampling to be representative of ambient/upwind conditions for both buildings.

⁶ See Footnote No. 5.

Benzyl Chloride, tert-Butyl Alcohol, and tert-Amyl Alcohol according to SW-846 Method 8260C;

- TCL Semivolatile Organic Compounds (SVOCs) plus 1-Methylnaphthalene and 2-Methylnaphthalene, according to SW-846 Method 8270D;
- Naphthalene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenz(a,h)anthracene, Indeno(1,2,3)pyrene, and 1,4-Dioxane according to SW-846 Method 8270D with Selective Ion Monitoring (SIM);
- Low Molecular Weight (LMAs) according to SW-846 Method 8015C by direct aqueous injection (DAI);
- TCL Organochlorine Pesticides according to SW-846 Method 8081B;
- Volatile Petroleum Hydrocarbons (VPH) according to Massachusetts Department of Environmental Protection (MADEP) VPH-Revision 1.1; and
- Extractable Petroleum Hydrocarbons (EPH) according to MADEP EPH Revision 1.1.

Results from the 1st Q 2017 sampling event will be included in the 2nd Q 2017 Progress Report (July 2017).

2.1.4. Release Assessment Phase 2A Program

Results of the 4th Q 2016 groundwater samples collected from monitoring wells installed during the Release Assessment Phase 2A Field Program were validated in accordance with USEPA Region 2 guidelines. Phase 2A Release Assessment monitoring well locations are shown on **Figure 8**. The laboratory analytical results and data validation reports are provided on CD in **Attachment B**. Field data sheets are included on CD in **Attachment C**.

The 1st Q 2017 groundwater sampling event was conducted in March 2017. This was an expanded groundwater sampling event and included each of the monitoring wells installed during the Phase 2A Release Assessment Field Program (OSMW-1S, OSMW-1D, OSMW-2S, OSMW-2D, OSMW-3S, OSMW-3D, OSMW-4S, OSMW-4D, OSMW-5S, OSMW-5D, OSMW-6S, AND OSMW-6D). Groundwater samples were analyzed for the following parameters consistent with the approach proposed in BMSMC's November 21, 2016 *Technical Memorandum Proposed Sampling Program Offsite Groundwater – South of Facility*:

- Benzene, Methyl-Tert Butyl Ether, tert-Amyl Alcohol, 1,2-Dichloroethane, Chloroform, Dichlorodifluoromethane, and Vinyl Chloride according to SW-846 Method 8260C;
- Benzaldehyde and Bis(2-ethylhexyl)phthalate according to SW-846 Method 8270D;⁷
- Naphthalene, Benzo(a)anthracene, and 1,4-Dioxane according to SW-846 Method 8270D SIM;
- Dieldrin according to SW-846 Method 8081B;
- C9-C10 Aromatics according MADEP VPH-Revision 1.1; and
- C11-C22 Aromatics according to MADEP EPH Revision 1.1.

Results from the 1st Q 2017 sampling event will be included in the 2nd Q 2017 Progress Report (July 2017).

2.1.5. Onsite Surface Soil Sampling

In January 2017, onsite surface soil samples were collected from each of the three SWMUs (the Former Tank Farm, Former Brule Incinerator Area, and the Building 5 Area) as well as from three background locations. The locations of the onsite surface soil samples are provided on **Figure 9**.

Surface soil sampling was conducted in accordance with the January 2017 *Onsite Surface Soil Sampling Plan*. Specific surface soil samples collected within each of the three SWMU locations as well as the background locations included:

- Three surface soil samples were collected in the Former Tank Farm Area. Each surface soil sample was analyzed for TCL VOCs, LMAs, TCL SVOCs, VPH, EPH, and TCL Organochlorine Pesticides.
- Two surface soil samples were collected in the Former Brule Incinerator Area. Each sample was analyzed for TCL SVOCs and TAL Metals.
- Two surface soil samples were collected in the Building 5 Area. Each sample was analyzed for TCL VOCs, LMAs, TCL SVOCs, VPH, EPH, and TCL Organochlorine Pesticides.

⁷ Bis(2-ethylhexyl)phthalate was added to the offsite groundwater sampling parameters list based on its detection above an RSL in southern perimeter monitoring well S-42D during the December 2016 groundwater sampling.

- Three surface soil were collected in background locations. Each sample was analyzed for TCL VOCs, LMAs, TCL SVOCs, VPH, EPH, TCL Organochlorine Pesticides, and TAL metals.

Surface soil sample results were validated according to USEPA Region 2 guidelines. The laboratory analytical results and data validation reports are provided on CD in Attachment D.

2.2. Former Tank Farm Area

Results of the 4th Q 2016 groundwater sampling event were validated in accordance with USEPA Region 2 guidelines. Locations of the groundwater monitoring wells are presented on **Figure 10**. The laboratory analytical results and data validation reports are provided on CD in **Attachment B**. Field data sheets are included on CD in **Attachment C**.

The 1st Q 2017 groundwater sampling was conducted in March 2017. This was an expanded groundwater sampling event and included the FTF Area monitoring wells currently in the groundwater monitoring program (MW-3, MW-5, MW-7, MW-13, MW-14, MW-15, MW-16, MW-17, and MW-18), as well as upgradient monitoring well MW-9, and interior monitoring well MW-19 (installed during the Release Assessment Phase 1 Field Program).⁸ Groundwater samples were analyzed for the following parameters:

- TCL VOCs plus Tetrahydrofuran, p-Isopropyl Toluene, 1,2,4-Trimethylbenzene, 1,3-Butadiene, Benzyl Chloride, tert-Butyl Alcohol, and tert-Amyl Alcohol according to SW-846 Method 8260C;
- TCL SVOCs plus 1-Methylnaphthalene and 2-Methylnaphthalene, according to SW-846 Method 8270D;
- Naphthalene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenz(a,h)anthracene, Indeno(1,2,3)pyrene, and 1,4-Dioxane according to SW-846 Method 8270D SIM;
- LMAs according to SW-846 Method 8015C by DAI;
- VPH according to MADEP VPH-Revision 1.1; and
- EPH according to MADEP EPH Revision 1.1.

⁸ Monitoring well MW-19 was installed during the Release Assessment Phase 1 Field Program to address USEPA comments on the 2011 CMS to further evaluate the presence of groundwater impacts within the FTF Area.

Results from the 1st Q 2017 sampling event will be included in the 2nd Q 2017 Progress Report (July 2017).

2.3. Brule Area

Results of the 4th Q 2016 groundwater sampling event were validated in accordance with USEPA Region 2 guidelines. Locations of the groundwater monitoring wells are presented on **Figure 11**. The laboratory analytical results and data validation reports are provided on CD in **Attachment B**. Field data sheets are included on CD in **Attachment C**.

The 1st Q 2017 groundwater sampling was conducted in March 2017. This sampling event included the collection of groundwater samples at monitoring wells BR-1, BR-2, and BR-3, as well as monitoring well BR-4 (installed during the Release Assessment Phase 1 Field Program).⁹ Groundwater samples were analyzed for the following parameters:

- TCL VOCs plus Tetrahydrofuran, p-Isopropyl Toluene, 1,2,4-Trimethylbenzene, 1,3-Butadiene, Benzyl Chloride, tert-Butyl Alcohol, and tert-Amyl Alcohol according to SW-846 Method 8260C;
- TCL SVOCs plus 1-Methylnaphthalene and 2-Methylnaphthalene, according to SW-846 Method 8270D;
- Naphthalene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenz(a,h)anthracene, Indeno(1,2,3)pyrene, and 1,4-Dioxane according to SW-846 Method 8270D SIM;
- LMAs according to SW-846 Method 8015C by DAI;
- VPH according to MADEP VPH-Revision 1.1; and
- EPH according to MADEP EPH Revision 1.1.

Results of the 1st Q 2017 sampling event will be included in the 2nd Q 2017 Progress Report (July 2017).

2.4. Building 5 Area

Results of the 4th Q 2016 groundwater sampling event were validated in accordance with USEPA Region 2 guidelines. Locations of the groundwater monitoring wells are presented on **Figure 12**.

⁹ Monitoring well BR-4 was installed during the Release Assessment Phase 1 Field Program to address USEPA comments on the 2011 CMS to further evaluate petroleum hydrocarbon impacts in the Brule Area.

The laboratory analytical results and data validation reports are provided on CD in **Attachment B**. Field data sheets are included on CD in **Attachment C**.

The 1st Q 2017 groundwater sampling event was conducted in March 2017. This was an expanded groundwater sampling event and included the Building 5 Area monitoring wells sampled quarterly (UP-1, A-1R4, A-2R2, G-1R3, S-31R2, S-32, and S-33), Building 5 Area monitoring wells sampled semiannually (E-1R, D-1R, S-29R, S-34, S-35, S-36, and UP-2), and Building 5 Area monitoring wells not currently in the groundwater monitoring program (S-28, S-30, S-37, S-38, and MW-11). In addition, monitoring wells S-35D, S-39S, and S-39D installed during the completion of the Release Assessment Phase 1 Field Program were also sampled during the 4th Q 2016 groundwater sampling event.¹⁰ Groundwater samples were analyzed for the following parameters:

- TCL VOCs plus Tetrahydrofuran, p-Isopropyl Toluene, 1,2,4-Trimethylbenzene, 1,3-Butadiene, Benzyl Chloride, tert-Butyl Alcohol, and tert-Amyl Alcohol according to SW-846 Method 8260C;
- TCL SVOCs plus 1-Methylnaphthalene and 2-Methylnaphthalene, according to SW-846 Method 8270D;
- Naphthalene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenz(a,h)anthracene, Indeno(1,2,3)pyrene, and 1,4-Dioxane according to SW-846 Method 8270D SIM;
- LMAs according to SW-846 Method 8015C DAI;
- TCL Organochlorine Pesticides according to SW-846 Method 8081B;
- VPH according to MADEP VPH Revision 1.1; and
- EPH according to MADEP EPH Revision 1.1.

Results of the 1st Q 2017 sampling event will be included in the 2nd Q 2017 Progress Report (July 2017).

¹⁰ Monitoring wells S-35D, S-39S, and S-39D were installed during the Release Assessment Phase 1 Field Program to address USEPA comments on the 2011 CMS to further evaluate the presence of groundwater impacts within the Building 5 Area.

3.0 Summary of Findings

This section presents a summary of findings based on groundwater samples collected as part of the 4th Q 2016 groundwater monitoring program. In addition, results of the vapor intrusion and onsite surface soil samples collected during the 1st Q 2017 are discussed in this section.

3.1. Former Tank Farm Area

The 4th Q 2016 groundwater sample results from the FTF Area were compared to the USEPA May 2016 residential and industrial groundwater concentrations for vapor intrusion and the Maximum Contaminant Levels (MCLs) or the May 2016 USEPA Regional Screening Levels (RSLs) for tap water in cases where MCLs have not been developed.¹¹ Groundwater sample results were also compared to the April 2016 Puerto Rico Water Quality Standards (PRWQS). Vapor intrusion screening levels, MCLs, the May 2016 RSLs for tap water, and the April 2016 PRWQS for the FTF Area COCs are provided in the table below.

Parameter	VI Groundwater Screening Levels (µg/L) ¹²		Groundwater Screening Levels (µg/L)		
	Residential	Industrial	MCL	Tap Water	PRWQS
Acetone	18,000,000	77,000,000	---	14,000	---
MIBK	420,000	1,800,000	---	6,300	---
Chloromethane	230	960	---	190	---
Methylene Chloride	630	7,600	5	---	46
Xylenes (Total)	290	1,200	10,000	---	---

Validated groundwater analytical results for samples collected in the FTF Area during the December 2016 groundwater sampling event are presented in **Table 2**. Results are grouped by FTF Area COCs and COPCs, including other VOCs, LMAs, PAHs, VPH, EPH, SVOCs, Organochlorine Pesticides, and MNA parameters, where available. USEPA and PRWQS groundwater screening levels are also provided in **Table 2**.

No FTF COCs were detected above their applicable groundwater concentration for vapor intrusion or groundwater screening levels. VOC COPCs detected above their respective groundwater screening level included 1,2,4-Trimethylbenzene, Ethylbenzene, 1,4-Dioxane, and Methyl Tert-Butyl Ether (MTBE). Ethylbenzene also exceeded its residential and industrial

¹¹ Residential based groundwater concentrations for vapor intrusion are presented for completeness purposes only. BMSMC plans to establish deed restrictions that limit site-use to industrial purposes and will therefore manage the site using industrial-based screening levels.

¹² Groundwater screening levels for vapor intrusion have been adjusted for an average groundwater temperature of 30C.

groundwater concentration for vapor intrusion. PAH COPCs detected above their respective groundwater screening level included 1-Methylnaphthalene, Benzo(a)anthracene, Chrysene, and Naphthalene. VPH fractions detected above their respective groundwater screening level included C9-C12 Aliphatics and C9-C10 Aromatics. C11-C22 Aromatics was the only EPH fraction detected above its screening level. Other than the PAHs noted above, 4-Chloroaniline was the only SVOC detected above its May 2016 tap water RSL. No LMAs were detected above their respective groundwater screening levels.

In general, the concentrations of MNA parameters were similar to values observed in 2011 and 2014. Inorganic MNA parameters detected above their respective groundwater screening level included Iron and Manganese. A detailed discussion of the concentrations of MNA parameters over time in support of evidence that MNA processes are occurring in the FTF Area will be included in the revised Corrective Measures Study Report.

As proposed in the July 2015 Response to USEPA Comments on the July 2011 Corrective Measure Study, groundwater analytical results for samples collected in the FTF Area during 2016 are presented in **Table 3**. Results are grouped by monitoring well, FTF Area COCs, and each FTF Area COPC detected above its screening level during the 2016 groundwater sampling is shaded.

Xylene was the only FTF Area COC that exceeded its screening level during 2016. In addition to the COPCs that exceeded screening levels during 4th Q 2016 as noted above, other COPCs that exceeded an RSL in at least one sample during 2016 included Benzene (1 sample), Vinyl Chloride (1 sample), 2-Methylnaphthalene (2 samples), and C9-C18 Aliphatics (2 samples).

Mann-Kendall time series plots for 1,4-Dioxane, C11-C22 Aromatics, 4-Chloroaniline, and 1-Methylnaphthalene, are presented in **Tables 4** through **Table 7**, respectively. These compounds at specific wells were selected for time series analysis at the FTF Area based on the following criteria:

- At least four quarters of data were available, which is the minimum number of data points recommended for Mann-Kendall analysis;
- The compound was detected above its RSL in multiple wells;
- The compound was detected above its RSL in the same well in at least two quarters; and
- Reporting limits for non-detect values were less than detected concentrations within the same well.

Results of the Mann-Kendall analysis indicate that the 1,4-Dioxane concentrations in MW-5, MW-7, MW-15, and MW-18 exhibit a stable trend and the 1,4-Dioxane concentrations in MW-9, MW-14, and MW-17 exhibit no trend.

Results of the Mann-Kendall analysis indicate that the C11-C22 Aromatics concentrations in MW-3, MW-5, and MW-18 exhibit a stable trend and the C11-C22 Aromatics concentrations in MW-17 exhibit a decreasing trend.

Results of the Mann-Kendall analysis indicate that the 4-Chloroaniline concentrations in MW-13 exhibits a stable trend.

Results of the Mann-Kendall analysis indicate that the 1-Methylnaphthalene concentrations in MW-3 exhibit a stable trend and the 1-Methylnaphthalene concentrations in MW-18 exhibit no trend.

3.2. Former Brule Incinerator Area

The 4th Q 2016 groundwater sample results from the Former Brule Incinerator Area were compared to the USEPA May 2016 residential and industrial groundwater concentrations for vapor intrusion and the USEPA MCLs or the May 2016 USEPA RSLs for tap water in cases where MCLs have not been developed. Groundwater sample results were also compared to the April 2016 PRWQS.

Validated groundwater analytical results for samples collected in the Brule Area during the December 2016 groundwater sampling event are presented in **Table 8**. Results are grouped by analyte group (VOCs, LMAs, PAHs, VPH, EPH, and SVOCs) and MNA parameters where available. USEPA and PRWQS groundwater screening levels are also provided in **Table 8**.

No COPCs exceeded residential or industrial groundwater concentrations for vapor intrusion. 1,4-Dioxane was the only VOC COPC detected above its groundwater screening level. VPH fractions detected above their groundwater screening level included C9-C10 Aromatics and C9-C12 Aliphatics. C11-C22 Aromatics was the only EPH fraction detected above its groundwater screening level. 4-Chloroaniline was the only SVOC COPC detected above its groundwater screening level. No LMAs, PAHs, or MNA parameters were detected above their respective groundwater screening levels.

In general, the concentrations of MNA parameters were similar to values observed in other onsite monitoring wells as well as MNA results collected in the Former Brule Incinerator Area in 2000. A detailed discussion of the concentrations of MNA parameters over time in support of evidence that MNA processes are occurring in the Former Brule Incinerator Area will be included in the revised Corrective Measures Study Report.

Groundwater analytical results for samples collected in the Former Brule Incinerator Area during 2016 are presented in **Table 9**. Results are grouped by monitoring well and each COPC detected above its screening level during the 2016 groundwater sampling is shaded.

In addition to the COPCs that exceeded screening levels during the 4th Q 2016 as noted above, Naphthalene (1 sample) was the only other COPC that exceeded an RSL in at least one sample during 2016.

Mann-Kendall time series plots for 1,4-Dioxane are presented in **Table 10**. These compounds were selected for time series analysis at the Brule Area because there are four quarters of data available, they were detected above their RSL in multiple wells, each compound was detected in a particular well in at least two quarters, and the reporting limits for non-detects were less than detected concentrations within the same well.

Results of the Mann-Kendall analysis indicate that the 1,4-Dioxane concentrations in BR-1 and BR-3 exhibit a stable trend and the 1,4-Dioxane concentrations in BR-2 exhibit no trend.

Results of the Mann-Kendall analysis indicate that the C11-C22 Aromatics concentrations in BR-1 and BR-2 exhibit a stable trend.

3.3. Building 5 Area

The 4th Q 2016 groundwater sample results from the Building 5 Area were compared to the USEPA May 2016 residential and industrial groundwater concentrations for vapor intrusion and the USEPA MCLs or the May 2016 USEPA RSLs for tap water in cases where MCLs have not been developed. Groundwater sample results were also compared to the April 2016 PRWQS. Vapor intrusion screening levels, MCLs, the May 2016 RSLs for tap water, and the April 2016 PRWQS for the Building 5 Area COCs are provided in the table below.

Parameter	VI Groundwater Screening Levels ($\mu\text{g}/\text{l}$)		Groundwater Screening Levels ($\mu\text{g}/\text{L}$)		
	Residential	Industrial	MCL	Tap Water	PRWQS
Benzene	1.3	5.6	5	---	5
Ethylbenzene	2.6	12	700	---	530
Toluene	15,000	63,000	1,000	---	1,000
Xylenes (total)	290	1,200	10,000	---	---
Acetone	18,000,000	77,000,000	---	14,000	---
MIBK	420,000	1,800,000	---	6,300	---
Isopropyl Alcohol	450,000	1,900,000	---	410	---
Methanol	86,000,000	360,000,000	---	20,000	---

Validated groundwater analytical results for samples collected in the Building 5 Area during the December 2016 groundwater sampling event are presented in **Table 11**. Results are grouped by Building 5 Area COCs and COPCs, including other VOCs, LMAs, PAHs, VPH, EPH, SVOCs, Organochlorine Pesticides, and MNA parameters, where available. USEPA and PRWQS screening levels are also provided in **Table 11**.

The 4th Q 2016 groundwater sampling results identified the COCs Benzene, Ethylbenzene and Xylenes at concentrations in excess of vapor intrusion screening levels, MCLs or PRWQS. Vapor intrusion screening levels were exceeded in for one or more COCs in in-plume wells A-1R4 (Benzene, Ethylbenzene, and Xylene), A-2R2 (Xylene), G-1R3 (Ethylbenzene and Xylene), S-31R2 (Benzene, Ethylbenzene, and Xylene), S-32 (Benzene, Ethylbenzene, and Xylene), S-33 (Ethylbenzene), and S-39S (Ethylbenzene and Xylene). MCLs/PRWQS for one or more COCs were exceeded in in-plume wells A-1R4 (Benzene), G-1R3 (Ethylbenzene and Xylene), S-31R2 (Ethylbenzene), and S-32 (Ethylbenzene and Xylene).¹³

The concentrations of Acetone, Benzene, Ethylbenzene, MIBK, Toluene, and Xylene within the Area E soil removal area remain significantly less than their respective pre-removal concentrations. Overall concentrations of COCs in Building 5 Area monitoring wells located downgradient of Area E were consistent with past events.

No COPCs exceeded residential or industrial groundwater concentrations for vapor intrusion. COPC VOCs detected above their respective groundwater screening level included 1,4-Dioxane and MTBE. Naphthalene was the only PAH COPC detected above its groundwater screening level. VPH fractions detected above their respective groundwater screening level included C9-C10 Aromatics and C9-C12 Aliphatics. C11-C22 Aromatics was the only EPH fraction detected above its respective groundwater screening level. Other than Naphthalene, no other SVOC COPCs were detected above their respective groundwater screening level. No LMAs and no Organochlorine Pesticides were detected above their respective groundwater screening levels.

Manganese and Iron were the only inorganic MNA parameters detected above their groundwater screening levels. In general, the concentrations of MNA parameters were similar to values observed in 2011 and 2014. A detailed discussion of the concentrations of MNA parameters over time in support of evidence that MNA processes are occurring in the Building 5 Area will be included in the revised Corrective Measures Study Report.

Groundwater analytical results for samples collected in the Building 5 Area during 2016 are presented in **Table 12**. Results are grouped by monitoring well, Building 5 Area COCs, and

¹³ Elevated levels of Xylene and Ethylbenzene were also detected at monitoring well S-39S, which is located near Frontera Creek, during several sampling events.

each Building 5 Area COPC detected above their screening level during the 2016 groundwater sampling is shaded.

Other than the COCs listed above, no other Building 5 Area COC exceeded its screening level during 2016. In addition to the COPCs that exceeded screening levels during the 4th Q 2016 as noted above, other COPCs that exceeded an RSL in at least one sample during 2016 included 1,1-Dichloroethane (1 sample), C9-C18 Aliphatics (4 samples), Benzaldehyde (1 sample), Bis(2-ethylhexyl)phthalate (1 sample), 4,4'-DDT (1 sample), Dieldrin (1 sample), and Heptachlor Epoxide (1 sample).

Mann-Kendall time series plots for the Building 5 Area COCs Ethylbenzene and Xylene in centerline wells (A-1R4, A-2R2, G-1R3, S-31R2, and S-32) are presented in **Table 13** and **Table 14**, respectively.

Based on concentration data collected since the second quarter 2013 (after Area E removal activities), ethylbenzene concentrations in A-1R4, A-2R2, and G-1R3 exhibit a decreasing trend, ethylbenzene concentrations in S-31R2 exhibit a stable trend, and ethylbenzene concentrations in S-32 exhibit no trend. Xylene concentrations in A-1R4, A-2R2, G-1R3, and S-32 exhibit a decreasing trend and xylene concentrations in S-31R2 exhibit no trend.

Mann-Kendall time series plots are also presented for COPCs including 1,4-Dioxane, MTBE, and Naphthalene in **Table 15** through **Table 17**, respectively. These compounds were selected for time series analysis at the Building 5 Area because there are four quarters of data available, they were detected above their RSL in multiple wells, each compound was detected in a particular well in at least two quarters, and the reporting limits for non-detects were less than detected concentrations within the same well.

Results of the Mann-Kendall analysis indicate that the 1,4-Dioxane concentrations in A-1R4 and S-30 exhibit a decreasing trend, 1,4-Dioxane concentrations in D-1R, E-1R, MW-11, S-28, S-31R2, S-33, S-34, S-35S, S-36, S-37, UP-1, and UP-2 exhibit a stable trend, and 1,4-Dioxane concentrations in S-29, S-32, and S-38 exhibit no trend.

Results of the Mann-Kendall analysis indicate that the MTBE concentrations in A-1R4 and A-2R2 exhibit a stable trend.

Results of the Mann-Kendall analysis indicate that the Naphthalene concentrations in A-1R4 exhibit a stable trend and the Naphthalene concentrations in S-32 exhibit no trend.

3.4. Release Assessment Phase 1 Program

The 4th Q 2016 groundwater sample results from the Release Assessment Phase 1 monitoring wells were compared to the USEPA May 2016 residential and industrial groundwater

concentrations for vapor intrusion and the USEPA MCLs or the May 2016 USEPA RSLs for tap water in cases where MCLs have not been developed. Groundwater sample results were also compared to the April 2016 PRWQS.

Validated groundwater analytical results for samples collected in Release Assessment Phase 1 monitoring wells (MW-21S, MW-22S, MW-23S, RA-10S, RA-10D, MW-20D, MW-20S, S-40D, S-40S, S-41D, S-41S, S-42D, S-42S, S-43D, and S-43S) during the December 2016 groundwater sampling event are presented in **Table 18**. Results are grouped by analyte group (VOCs, LMAs, PAHs, VPH, EPH, SVOCs, and Organochlorine Pesticides) and MNA parameters, where available. USEPA and PRWQS screening levels are also provided in **Table 18**.

1,4-Dioxane was the only COPC that exceeded the residential groundwater concentration for vapor intrusion. 1,4-Dioxane was the only VOC COPC detected above its groundwater screening level in samples collected in the Release Assessment Phase 1 monitoring wells. SVOCs detected above their respective groundwater screening level included Naphthalene and Bis(2-ethylhexyl)phthalate. C9-C10 Aromatics was the only VPH fraction detected above its groundwater screening level. C11-C22 Aromatics was the only EPH fraction detected above its groundwater screening level. No LMAs or Organochlorine Pesticides were detected above their respective groundwater screening levels.

In general, the concentrations of MNA parameters were similar to values observed in other onsite monitoring wells. Manganese was the only inorganic MNA parameter detected above its groundwater screening level. The Manganese concentrations in upgradient wells MW-21S (771 µg/l) and MW-22S (2,400 µg/l) also exceeded its groundwater screening level of 430 µg/L.

Groundwater analytical results for samples collected during the Release Assessment Phase 1 Program in 2016 are presented in **Table 19**. Results are grouped by monitoring well and each COPC detected above its screening level during the 2016 groundwater sampling is shaded.

In addition to the COPCs that exceeded screening levels during 4th Q 2016 as noted above, MTBE (1 sample) and tert-Amyl Alcohol (1 sample) were the only other COPCs that exceeded an RSL in at least one sample during 2016.

No Mann-Kendall time series plots were prepared for the Release Assessment Phase 1 monitoring wells as four quarters of sampling data for these wells are not available at this time.

3.5. Release Assessment Phase 2A Program

The 4th Q 2016 groundwater sample results from the Release Assessment Phase 2A monitoring wells were compared to the USEPA May 2016 residential and industrial groundwater concentrations for vapor intrusion and the USEPA MCLs or the May 2016 USEPAPRLs for tap

water in cases where MCLs have not been developed. Groundwater sample results were also compared to the April 2016 PRWQS.

Validated groundwater analytical results for samples collected in Release Assessment Phase 2A monitoring during the December 2016 groundwater sampling event are presented in **Table 20**. Results are grouped by analyte group (VOCs, PAHs, VPH, EPH, SVOCs, and Organochlorine Pesticides) and MNA parameters where available. USEPA and PRWQS screening levels are also provided in **Table 20**.

Dichlorodifluoromethane was the only COPC that exceeded its residential groundwater concentration for vapor intrusion. Dichlorodifluoromethane exceeded its residential groundwater concentration for vapor intrusion in one well (OSMW-1D) located on State Road No. 3. This sample was collected immediately downgradient of the Facility and approximately 450 feet upgradient of the nearest residential property. This distance (450 feet) is more than four times greater than the USEPA-recommended 100-foot buffer zone that would trigger a vapor intrusion evaluation (USEPA, 2015). Dichlorodifluoromethane was not detected in the paired shallow monitoring well OSMW-1S.

1,4-Dioxane was the only VOC COPC detected above its groundwater screening level in samples collected in the Release Assessment Phase 2A monitoring wells. C9-C10 Aromatics was the only VPH fraction detected above its groundwater screening level. C11-C22 Aromatics was the only EPH fraction detected above its groundwater screening level. No PAHS, SVOCs, or Organochlorine Pesticides were detected above their respective groundwater screening levels.

In general, the concentrations of most of the MNA parameters were similar to values observed in onsite monitoring wells. Manganese was the only inorganic MNA parameter detected above its groundwater screening level.

Groundwater analytical results for samples collected during the Release Assessment Phase 2A Program in 2016 are presented in **Table 21**. Results are grouped by monitoring well and each COPC detected above its screening level during the 2016 groundwater sampling is shaded.

Other than the COPCs listed above, no other COPCs were detected at concentrations that exceeded their respective RSL during 2016.

No Mann-Kendall time series plots were prepared for the Release Assessment Phase 2A monitoring wells as four quarters of sampling data for these wells are not available at this time.

3.6. Vapor Intrusion Program

Results for vapor intrusion samples collected and validated during the 1st Q 2017 are presented below. A more detailed discussion of the sampling results at Buildings 8, 13, 15, 18, and 30 will

presented in the *Supplemental Vapor Intrusion Report Buildings 8, 13, 15, 18, and 30* to be submitted to the USEPA in the 2nd Q 2017.

3.6.1. Building 8 Vapor Intrusion

Validated analytical results for the Building 8 indoor air and ambient air samples collected in January 2017 are presented in **Table 22**. The USEPA industrial air screening levels are also provided in **Table 22**. Concentrations that exceed the USEPA industrial air RSLs are shaded. Sample results indicate that chloroform was the only TO-15 compound that exceeded its industrial air RSL. The chloroform concentration duplicate sample B8IA-2 DUP ($1.0 \mu\text{g}/\text{m}^3$) exceeded the industrial air RSL of $0.53 \mu\text{g}/\text{m}^3$. However, the chloroform concentration in the associated program sample B8IA-2 ($0.19 \mu\text{g}/\text{m}^3$) was less than the industrial air RSL.

Validated analytical results for the Building 8 sub-slab samples collected in January 2017 are presented in **Table 23**. The USEPA industrial sub-slab screening levels are also provided in **Table 23**. Concentrations that exceed the USEPA industrial air RSLs are shaded. Sample results indicate that no TO-15 compounds exceeded their industrial sub-slab RSL.¹⁴ Methane exceeded its industrial sub-slab soil gas screening level of 0.5% which is equal to 10% of the methane lower explosive limit (LEL) of 5%.

3.6.2. Building 13 Vapor Intrusion

Validated analytical results for the Building 13 indoor air and ambient air samples collected in January 2017 are presented in **Table 24**. The USEPA industrial air screening levels are also provided in **Table 24**. Sample results indicate that no TO-15 compounds exceeded their industrial air RSL.

Validated analytical results for the Building 13 sub-slab samples collected in January 2017 are presented in **Table 25**. The USEPA industrial sub-slab screening levels are also provided in **Table 25**. Sample results indicate that no TO-15 compounds exceeded their industrial sub-slab RSL.

3.6.3. Building 15 Vapor Intrusion

Validated analytical results for the Building 15 indoor air and ambient air samples collected in January 2017 are presented in **Table 26**. The USEPA industrial air screening levels are also

¹⁴ Reporting limits for the Building 8 sub-slab soil gas samples were elevated by a factor of approximately 50 times due to the presence of elevated concentrations of methane in the samples. As such, many compounds reported as non-detect had reporting limits that exceeded their industrial sub-slab screening level.

provided in **Table 26**. Sample results indicate that no TO-15 compounds exceeded their industrial air RSL.

Validated analytical results for the Building 15 sub-slab samples collected in January 2017 are presented in **Table 27**. The USEPA industrial sub-slab screening levels are also provided in **Table 27**. Sample results indicate that no TO-15 compounds exceeded their industrial sub-slab RSL.

3.6.4. Building 18 Vapor Intrusion

Validated analytical results for the Building 18 indoor air and ambient air samples collected in January 2017 are presented in **Table 28**. The USEPA industrial air screening levels are also provided in **Table 28**. Concentrations that exceed the USEPA industrial air RSLs are shaded. Sample results indicate that 1,2-Dichloroethane (five samples including one duplicate sample) and Naphthalene (one sample via Method TO-15) exceeded their industrial air RSL. The Naphthalene concentration (via Method TO-15) in the associated ambient air sample also exceeded the industrial air RSL.

Validated analytical results for the Building 18 sub-slab samples collected in January 2017 are presented in **Table 29**. The USEPA industrial sub-slab screening levels are also provided in **Table 29**. Sample results indicate that no TO-15 compounds exceeded their industrial sub-slab RSL.

3.6.5. Building 30 Vapor Intrusion

Validated analytical results for the Building 30 indoor air and ambient air samples collected in January 2017 are presented in **Table 30**. The USEPA industrial air screening levels are also provided in **Table 30**. Concentrations that exceed the USEPA industrial air RSLs are shaded. Sample results indicate that 1,1,2,2-Tetrachlorethane (two samples), alpha-Chlorotoluene (two samples), 1,2,4-Trimethylbenzene (one sample), 1,2-Dichloroethane (one sample), and Naphthalene (one sample via Method TO-15) exceeded their industrial air RSL. The Naphthalene concentration (via Method TO-15) in the associated ambient air sample also exceeded the industrial air RSL.

3.7. Onsite Surface Soil Sampling Program

Results for onsite surface soil samples collected and validated during the 1st Q 2017 are presented below. A more detailed discussion of the surface soil sampling results will be presented in the *Release Assessment Onsite Surface Soil Sampling Technical Memorandum* to be submitted to the USEPA in the 2nd Q 2017.

Validated analytical results for the onsite surface samples collected in the Former Tank Farm Area, Former Brule Incinerator Area, Building 5 Area, and background locations are presented in **Table 31**. The USEPA and PREQB residential and industrial screening levels are also provided in **Table 31**. Concentrations that exceed an USEPA or PREQB screening level are shaded.

3.7.1. Former Tank Farm Area Surface Soil

Sample results indicate that Benzo(a)pyrene was the only compound (one sample) that exceeded its USEPA and PREQB residential soil screening level. Benzo(a)pyrene was also detected in background surface soil samples at concentrations greater than the levels detected at the Former Tank Farm Area.

All detected concentrations were less than their respective USEPA and PREQB industrial soil screening level.

3.7.2. Former Brule Incinerator Area Surface Soil

Sample results indicate that Arsenic (three samples including one duplicate sample) exceeded its USEPA residential and industrial soil screening level as well as Arsenic levels detected in the background surface soil samples. Thallium (one sample) exceeded its USEPA residential soil screening level as well as Thallium levels detected in the background surface soil samples.

3.7.3. Building 5 Area Surface Soil

Sample results indicate that no compounds were detected above their respective residential or industrial USEPA and PREQB soil screening levels.

4.0 Summary of Changes Made

The CMS program is currently under evaluation pending final field activities that may require the expansion of the program to other areas or SWMUs within the facility, and the integration of additional wells into the current Facility Groundwater Monitoring Program among other changes.

5.0 Summary of Public Participation Activities

A public meeting to present the status of the Phase 2A Release Assessment Program, results of the December 2016 groundwater sampling, and upcoming sampling activities was held on March 23, 2017 at the Ciudad Cristiana Community Basketball Court. The meeting was attended by the USEPA-CEPD, PREQB, BMSMC, Torres & Garcia PSC, residents of the Ciudad Cristiana neighborhood, and others.

6.0 Summary of Problems Encountered

There were no problems encountered relating to the RCRA Corrective Action Program during this reporting period.

7.0 Changes in Personnel

There were no changes in personnel during this reporting period.

8.0 Projected Work for Next Reporting Period

Work scheduled to be performed during the three month period from April 1, 2017 through June 30, 2017 is described in this section.

8.1. Site-Wide

The 1st Q 2017 groundwater results for the Release Assessment Phase 1 and Phase 2A monitoring wells will be validated.

The sewer bedding/utility assessment field work is planned to be completed during the 2nd Q 2017.

The Phase 2B Release Assessment Sampling and Analysis Plan – Frontera Creek may be submitted to the USEPA during the 2nd Q 2017 (the Phase 2B evaluation will be performed after the completion of the Phase 2C Potential Preferential Pathway Delineation/Utility Assessment).

Monthly depth to groundwater measurements will be collected in monitoring wells located along State Road No. 3. Results of the monthly depth to groundwater measurements will be presented in the subsequent Progress Report.

Monitoring wells installed during the Release Assessment Phase 1 Field Program will be sampled during the 2nd Q 2017 groundwater sampling event. These monitoring wells will be sampled for the same expanded list of analytical parameters that were sampled for in March 2017.

Monitoring wells installed during the Release Assessment Phase 2A Program will be sampled during the 2nd Q 2017 groundwater sampling event. In response to the March 2017 USEPA comments on the *Technical Memorandum Proposed Sampling Program Offsite Groundwater – South of Facility*, the Phase 2A monitoring wells will be sampled for the same expanded list of parameters as onsite monitoring wells.

Activities related to hydrogeologic testing and groundwater treatability studies are tentatively scheduled for the 2nd Q 2017 (pending receipt of permits/authorizations from the PREQB).

Quarterly Progress Report Number 66, 1st Quarter 2017
Bristol-Myers Squibb Manufacturing Company
Humacao, Puerto Rico
April 2017

The Final RCRA Corrective Action Quarterly Progress Report No. 62 will be submitted to the USEPA during the 2nd Q 2017 as requested by the Agency.

The Onsite Surface Soil Sampling Technical Memorandum will be submitted to the USEPA during the 2nd Q 2017.

BMSMC will submit a Response to Comments to the Technical Review RCRA Corrective Action Program Quarterly Progress No 63, 2nd Quarter 2016 to the USEPA during the 2nd Q 2017.

BMSMC will submit a Response to Comments to the Technical Review of the September 2016 Release Assessment Phase 1 Technical Memorandum to the USEPA during the 2nd Q 2017.

BMSMC will submit a Response to Comments to the Technical Review of the November 2016 Technical Memorandum Proposed Sampling Program Offsite Groundwater – South of Facility to the USEPA during the 2nd Q 2017.

8.2. Former Tank Farm Area

The 1st Q 2017 groundwater results will be validated.

The 2nd Q 2017 quarterly groundwater sampling event will be conducted in June 2017. Monitoring wells will be sampled for the same expanded list of analytical parameters that were sampled in March 2017.

8.3. Brule Area

The 1st Q 2017 groundwater results will be validated.

The 2nd Q 2017 quarterly groundwater sampling event will be conducted in June 2017. Monitoring wells will be sampled for the same expanded list of analytical parameters that were sampled in March 2017.

8.4. Building 5 Area

The 1st Q 2017 groundwater results will be validated.

The 2nd Q 2017 quarterly groundwater sampling event will be conducted in June 2017. Monitoring wells will be sampled for the same expanded list of analytical parameters that were sampled in March 2017.

9.0 Additional Documentation

Additional documentation submitted to the USEPA during the period January 1, 2017 through March 31, 2017 included:

- On February 13, 2017, BMSMC submitted a copy of the laboratory technical reports and data validation reports for the Phase 2A offsite groundwater analytical results to the USEPA.
- On March 23, 2017, BMSMC submitted a copy of the presentation for the March 23, 2017 public meeting at Ciudad Cristiana to the USEPA.

Tables

Table 1
Groundwater Elevation Data - July 2016 Through February 2017

Well ID	Measurement Date					
	7/27/2016	8/31/2016	10/17/2016	11/29/2016	1/30/2017	2/27/2017
	Groundwater Elevation (Feet MSL)					
<i>Former Tank Farm Area</i>						
MW-12	---	15.49	---	17.76	---	14.92
MW-13	---	15.93	---	17.75	---	15.26
MW-14	---	14.91	---	16.87	---	14.40
MW-15	---	14.29	---	16.36	---	13.87
MW-16	---	16.30	---	18.69	---	15.60
MW-17	---	14.90	---	17.11	---	14.32
MW-18	---	14.84	---	17.09	---	14.34
MW-19	---	14.10	---	16.26	---	13.53
MW-3	---	15.83	---	17.52	---	15.30
MW-5	---	15.20	---	19.31	---	14.54
MW-7	---	16.21	---	18.17	---	15.42
MW-9	---	16.62	---	17.79	16.83	15.54
RW-1	---	15.65	---	18.28	---	14.83
<i>Former Brule Incinerator</i>						
BR-1	---	14.16	---	16.38	---	13.79
BR-2	---	14.08	---	16.48	---	13.72
BR-3	---	14.17	---	16.45	---	13.73
BR-4	---	3.65	---	13.13	---	13.10
<i>Building 5 Area</i>						
A-1R4	---	14.07	---	15.61	---	12.91
A-2R2	---	13.72	---	16.47	---	12.99
D-1R	---	10.68	---	11.70	11.07	10.44
E-1R	---	10.88	---	12.73	---	10.45
G-1R3	---	13.91	---	16.32	---	11.60
MW-11	---	11.74	---	13.27	---	11.42
S-28	---	13.17	14.56	15.48	13.39	12.69
S-29R	---	11.76	---	14.92	---	11.26
S-30	---	9.79	10.62	11.46	9.93	9.72
S-31R2	---	11.03	---	13.67	---	10.37
S-32	---	10.00	11.22	12.75	10.16	9.71
S-33	---	9.53	11.06	12.05	9.74	9.42
S-34	---	8.81	9.68	10.86	8.92	8.64
S-35D	11.88	11.38	12.57	13.43	12.07	11.50
S-35S	9.40	8.97	9.79	11.11	9.16	8.98
S-36	---	9.81	11.03	14.56	10.01	9.60
S-37	---	9.04	9.68	10.57	9.20	8.97
S-38	---	13.05	---	15.23	---	12.54

Table 1
Groundwater Elevation Data - July 2016 Through February 2017

Well ID	Measurement Date					
	7/27/2016	8/31/2016	10/17/2016	11/29/2016	1/30/2017	2/27/2017
	Groundwater Elevation (Feet MSL)					
S-39D	---	12.31	14.34	15.55	12.56	11.85
S-39S	---	12.37	14.36	15.56	12.58	11.87
UP-1	---	13.95	---	16.19	---	13.37
UP-2	---	13.50	---	15.98	---	13.33
Release Assessment Phase 1						
MW-20D	---	12.77	13.73	14.46	13.06	12.68
MW-20S	---	12.78	13.79	14.52	13.07	12.75
MW-21S	---	15.63	---	18.25	15.68	14.60
MW-22S	---	15.92	---	18.03	15.88	15.16
MW-23S	---	14.02	---	15.91	11.51	13.68
RA-10D	---	13.58	---	15.88	---	13.04
RA-10S	---	13.62	---	15.92	---	13.08
S-40D	---	10.76	11.57	12.80	11.10	10.61
S-40S	---	9.81	11.39	14.04	10.17	9.66
S-41D	10.78	10.65	11.27	12.24	10.92	10.47
S-41S	8.46	8.11	8.68	9.89	8.20	8.08
S-42D	10.59	10.27	11.02	11.59	10.47	10.19
S-42S	10.46	---	10.88	11.45	10.31	NA
S-43D	12.52	12.22	13.30	14.11	12.64	12.18
S-43S	12.38	12.09	13.15	13.92	12.49	12.04
Release Assessment Phase 2A						
OSMW-1D	11.62	---	12.15	13.08	11.79	11.36
OSMW-1S	11.13	---	11.82	12.51	11.20	10.74
OSMW-2D	10.87	---	---	12.74	11.30	10.77
OSMW-2S	10.78	---	---	12.54	11.19	10.52
OSMW-3D	11.24	---	---	13.06	11.64	10.89
OSMW-3S	11.06	---	---	12.63	11.29	10.48
OSMW-4D	8.52	---	---	9.83	8.74	8.21
OSMW-4S	8.26	---	---	9.34	8.32	7.90
OSMW-5D	9.07	---	---	10.25	9.39	10.69
OSMW-5S	8.61	---	---	9.80	8.84	8.17
OSMW-6D	6.91	---	---	7.87	7.07	6.52
OSMW-6S	6.49	---	---	7.63	6.67	6.16

Notes:

--- Well is not included in the monthly groundwater elevation monitoring.

NA - Not Accessible. Well was not accessible during groundwater elevation monitoring.

Table 2
Former Tank Farm Area Groundwater Analytical Results - December 2016

Parameter	Residential Groundwater Concentration for Vapor Intrusion	Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or May 2016 Tap Water RSL	April 2016 PRWQS ¹	MW-3 12/19/2016	MW-5 12/19/2016	MW-7 12/14/2016	MW-9 12/19/2016	MW-13 12/14/2016	MW-14 12/20/2016	MW-15 12/20/2016	MW-16 12/23/2016	MW-17 12/20/2016	MW-17 DUP 12/20/2016	MW-18 12/20/2016	MW-19 12/23/2016
FTF Area COC Results (ug/L)																
Acetone	18000000	77000000	14000	---	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<1300
Chloromethane	230	960	190	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<100
Methyl Isobutyl Ketone (MIBK)	420000	1800000	6300	---	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<250
Methylene Chloride	630	7600	5	46	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<250
Total Xylenes	290	1200	10000	10000	<2	48	0.71J	<2	<2	<2	<2	<2	<2	<2	<2	6987
Other Volatile Organic Compounds Analytical Results (ug/L)																
1,1,1-Trichloroethane	6000	25000	200	200	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50
1,1,2,2-Tetrachloroethane	2.4	11	0.076	1.7	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50
1,1,2-Trichloroethane	4	18	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50J
1,1-Dichloroethane	6.2	27	2.8	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50
1,1-Dichloroethylene	160	690	7	7	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50
1,2,3-Trichlorobenzene	---	---	7	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<100
1,2,4-Trichlorobenzene	25	110	70	35	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<100
1,2,4-Trimethylbenzene	21	89	15	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	32.1J
1,2-Dibromo-3-chloropropane	0.02	0.24	0.2	---	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<250
1,2-Dibromoethane	0.13	0.58	0.05	0.052	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<100
1,2-Dichlorobenzene	1900	8100	600	420	<1	<1	7.6	<1	<1	<1	<1	6.6	<1	<1	<1	<50
1,2-Dichloroethane	1.8	7.8	5	3.8	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50
1,2-Dichloroethylene (cis)	---	---	70	70	<1	<1	0.99J	<1	<1	<1	<1	<1	<1	<1	<1	<50
1,2-Dichloroethylene (trans)	---	---	100	100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50
1,2-Dichloropropane	1.9	8.4	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50
1,3-Butadiene	0.027	0.12	0.018	---	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,3-Dichlorobenzene	---	---	---	320	<1	<1	0.27J	<1	<1	<1	<1	<1	<1	<1	<1	<50
1,3-Dichloropropene (cis) ²	---	---	0.47	3.4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50
1,3-Dichloropropene (trans) ²	---	---	0.47	3.4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50
1,4-Dichlorobenzene	1.9	8.3	75	63	<1	<1	1.3	<1	<1	<1	<1	<1	<1	<1	<1	<50
1,4-Dioxane	2200	9600	0.46	---	<0.1	0.598	1.64	0.486	0.16	2.71	2.88	0.572J	16.7	13.1	<0.1	0.262
2-Butanone (MEK)	1800000	7500000	5600	---	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<250
2-Hexanone	6200	26000	38	---	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<500
Benzene	1.3	5.6	5	5	<1	0.23J	<1	<1	<1	0.27J	<1	<1	<1	<1	<1	<50
Benzyl Chloride	2.5	11	0.089	---	<2J	<2J	<2	<2J	<2	<2	<2J	<2	<2J	<2J	<2	<100
Bromochloromethane	560	2400	83	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50
Bromodichloromethane	0.69	3	0.13	5.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50
Bromoform	85	370	3.3	43	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50
Bromomethane	15	63	7.5	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<100
Carbon Disulfide	1000	4300	810	---	0.48J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<100
Carbon Tetrachloride	0.34	1.5	5	2.3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50
Chlorobenzene	310	1300	100	100	<1	<1	1.3	<1	<1	<1	<1	<1	<1	<1	<1	<50
Chlorodibromomethane	---	---	0.87	4	<1	<1	<1	<1	<1	<1	<1J	<1	<1	<1	<1	<50
Chloroethane	20000	82000	21000	---	<2	<2	<2J	<2	<2J	<2	<2	<2J	<2	<2	<2	<100J
Chloroform	0.66	2.9	8	57	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50
Cyclohexane	820	3500	13000	---	<1	<1	<1	<1	<1	<1	<1	0.38J	<1	<1	<1	<50
Dichlorodifluoromethane	6	25	200	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<100
Ethylbenzene	2.6	12	700	530	<1	16.6	1.1	<1	<1	<1	<1	<1	<1	<1	<1	3020
Freon 113	1200	5100	55000	---	<1	<1	<1	<1	<1	0.47J	<1	<1	16.5	<		

Table 2
Former Tank Farm Area Groundwater Analytical Results - December 2016

Parameter	Residential Groundwater Concentration for Vapor Intrusion	Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or May 2016 Tap Water RSL	April 2016 PRWQS ¹	MW-3 12/19/2016	MW-5 12/19/2016	MW-7 12/14/2016	MW-9 12/19/2016	MW-13 12/14/2016	MW-14 12/20/2016	MW-15 12/20/2016	MW-16 12/23/2016	MW-17 12/20/2016	MW-17 DUP 12/20/2016	MW-18 12/20/2016	MW-19 12/23/2016
Isopropylbenzene	630	2600	450	---	0.73J	5.5	<1	<1	<1	<1	36.1	<1	7.6	8	<1	14.2J
Methyl Acetate	---	---	20000	---	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1000
Methyl Tert-Butyl Ether (MTBE)	370	1600	14	14	<1	5.7	0.34J	<1	<1	0.81J	18.1	<1	1.1	1.1	<1	<50
Methylcyclohexane	---	---	---	---	<1	<1	<1	<1	<1	<1	0.37J	<1	<1	<1	<1	<50
p-Isopropyl Toluene	---	---	---	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50
Styrene	7000	29000	100	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50
tert-Amyl Alcohol	4100	17000	6.3	---	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1000
tert-Butyl alcohol	---	---	---	1400	<20	338	<20	<20	<20	<20J	476	<20J	19.4J	18J	<20J	<1000
Tetrachloroethylene	12	50	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50
Tetrahydrofuran	590000	2500000	3400	---	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<250J
Toluene	15000	63000	1000	1000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	49.7J
Trichloroethylene	0.94	5.9	5	5	<1	<1	0.72J	<1	<1	<1	<1	<1	<1	<1	<1	<50
Trichlorofluoromethane	---	---	5200	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<100
Vinyl Chloride	0.13	2.1	2	0.25	<1	<1	<1	<1	<1	<1	<1	<1	<1J	<1	<1	<50
Low Molecular Weight Alcohols Analytical Results (ug/L)																
1-Propanol	---	---	---	---	<100	<100	<100	<100	<100	<100	<100	<100J	<100	<100	<100	<100
2-Butanol	58000000	---	24000	---	<100	<100	<100	<100	<100	<100	<100	<100J	<100	<100	<100	<100
Ethanol	---	---	---	10000	<100	<100	<100	<100	<100	<100	<100	<100J	<100	<100	<100	<100
Isobutyl Alcohol	---	---	5900	---	<100	<100	<100	<100	<100	<100	<100	<100J	<100	<100	<100	<100
Isopropyl Alcohol	450000	1900000	410	---	<100	<100	<100	<100	<100	<100	<100	<100J	<100	<100	<100	<100
Methanol	86000000	360000000	20000	---	<200	<200	<200	<200	<200	<200	<200	<200J	<200	<200	<200	<200
n-Butanol	---	---	2000	---	<100	<100	<100	<100	<100	<100	<100	<100J	<100	<100	<100	<100
Polycyclic Aromatic Hydrocarbons Analytical Results (ug/L)																
1-Methylnaphthalene	---	---	1.1	---	<1	<1	<1.1	<1.1	<1	<1	<1J	<1.1	<1	<1	<1	1.4
2-Methylnaphthalene	---	---	36	---	<1	<1	<1	<1.1	<1	<1	<1J	<1.1	<1	<1	<1	1.4
Acenaphthene	---	---	530	670	<1	<1	<1	<1.1	<1	<1	<1J	<1.1	<1	<1	<1	<1
Acenaphthylene	---	---	---	---	<1	<1	<1	<1.1	<1	<1	<1J	<1.1	<1	<1	<1	<1
Anthracene	---	---	1800	8300	<1	<1	<1	<1.1	<1	<1	<1J	<1.1	<1	<1	<1	<1
Benz(a)anthracene	---	---	0.012	0.038	<0.05	<0.051	<0.051	<0.056	<0.053	<0.051	<0.05	<0.051J	<0.054	<0.05	<0.051	0.427
Benz(a)pyrene	---	---	0.2	0.038	<0.05	<0.051	<0.051	<0.056	<0.053	<0.051	<0.05	<0.051J	<0.054	<0.05	<0.051	<0.051
Benz(b)fluoranthene	---	---	0.034	0.038	<0.1	<0.1	<0.1	<0.11	<0.11	<0.1	<0.1J	<0.11	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	---	---	---	210	<1	<1	<1	<1.1	<1.1	<1	<1J	<1.1	<1	<1	<1	<1
Benzo(k)fluoranthene	---	---	0.34	0.038	<0.1	<0.1	<0.1	<0.11	<0.11	<0.1	<0.1J	<0.11	<0.1	<0.1	<0.1	<0.1
Chrysene	---	---	3.4	0.038	<0.1	<0.1	<0.1	<0.11	<0.11	<0.1	<0.1J	<0.11	<0.1	<0.1	<0.1	0.106
Dibenz(a,h)anthracene	---	---	0.0034	0.038	<0.1	<0.1	<0.1	<0.11	<0.11	<0.1	<0.1J	<0.11	<0.1	<0.1	<0.1	<0.1
Fluoranthene	---	---	800	130	<1	<1	<1	<1.1	<1.1	<1	<1J	<1.1	<1	<1	<1	3.1
Fluorene	---	---	290	1100	<1	<1	<1	<1.1	<1.1	<1	<1J	<1.1	<1	<1	<1	<1
Indeno(1,2,3-cd)pyrene	---	---	0.034	0.038	<0.1	<0.1	<0.1	<0.11	<0.11	<0.1	<0.1J	<0.11	<0.1	<0.1	<0.1	<0.1
Naphthalene	3.2	14	0.17	0.17	<0.1	<0.1	<0.1	<0.11	<0.11	<0.1	<0.1J	<0.11	<0.1	<0.1	<0.1	1.51
Phenanthrene	---	---	---	18	<1	<1	<1	<1.1	<1.1	<1	<1J	<1.1	<1	<1	<1	0.53J
Pyrene	---	---	120	830	<1	<1	<1	<1.1	<1.1	<1	<1J	<1.1	<1	<1	<1	2
Volatile Petroleum Hydrocarbons Analytical Results (ug/L)																
C5-C8 Aliphatics	---	---	1300	---	<50	24.2J	11.8J	<50J	<50J	<50	32.7J	<50	18.8J	17.5J	<50	<50
C5-C8 Aliphatics (Unadj.)	---	---	1300	---	<50	30.4J	12.1J	<50J								

Table 2
Former Tank Farm Area Groundwater Analytical Results - December 2016

Parameter	Residential Groundwater Concentration for Vapor Intrusion	Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or May 2016 Tap Water RSL	April 2016 PRWQS ¹	MW-3 12/19/2016	MW-5 12/19/2016	MW-7 12/14/2016	MW-9 12/19/2016	MW-13 12/14/2016	MW-14 12/20/2016	MW-15 12/20/2016	MW-16 12/23/2016	MW-17 12/20/2016	MW-17 DUP 12/20/2016	MW-18 12/20/2016	MW-19 12/23/2016
<i>Semivolatile Organic Compounds Analytical Results (ug/l)</i>																
1,1'-Biphenyl	23	95	0.83	---	<1	<1	<1	<1.1	<1.1	<1	<1	<1J	<1.1	<1	<1	<1
1,2,4,5-Tetrachlorobenzene	---	---	1.7	---	<2	<2	<2	<2.2	<2.1	<2	<2	<2J	<2.2	<2	<2	<2.1
1,3-Hexachlorobutadiene	0.21	0.93	0.14	4.4	<1J	<1J	<1	<1.1J	<1.1	<1	<1	<1J	<1.1	<1	<1	<1
2,3,4,6-Tetrachlorophenol	---	---	240	---	<5	<5.1	<5.1	<5.6	<5.3	<5.1	<5	<5.1J	<5.4	<5	<5.1J	<5.1
2,4,5-Trichlorophenol	---	---	1200	---	<5	<5.1	<5.1	<5.6	<5.3	<5.1	<5	<5.1J	<5.4	<5	<5.1	<5.1
2,4,6-Trichlorophenol	---	---	4.1	14	<5	<5.1	<5.1	<5.6	<5.3	<5.1	<5	<5.1J	<5.4	<5	<5.1	<5.1
2,4-Dichlorophenol	---	---	46	77	<2	<2	<2	<2.2	<2.1	<2	<2	<2J	<2.2	<2	<2	<2.1
2,4-Dimethylphenol	---	---	360	380	<5	<5.1	<5.1	<5.6	<5.3	<5.1	<5	<5.1J	<5.4	<5	<5.1	8.5
2,4-Dinitrophenol	---	---	39	69	<10	<10	<10	<11	<11	<10	<10	<10J	<11	<10	<10	<10
2,4-Dinitrotoluene	---	---	0.24	1.1	<1	<1	<1	<1.1	<1.1	<1	<1	<1J	<1.1	<1	<1	<1
2,6-Dinitrotoluene	---	---	0.049	---	<1	<1	<1	<1.1	<1.1	<1	<1	<1J	<1.1	<1	<1	<1
2-Chloronaphthalene	---	---	750	1000	<2	<2	<2	<2.2	<2.1	<2	<2	<2J	<2.2	<2	<2	<2.1
2-Chlorophenol	---	---	91	81	<5	<5.1	<5.1	<5.6	<5.3	<5.1	<5	<5.1J	<5.4	<5	<5.1	<5.1
2-Methylphenol	---	---	930	---	<2	<2	<2	<2.2	<2.1	<2	<2	<2J	<2.2	<2	<2	<2.1
2-Nitroaniline	---	---	190	---	<5	<5.1	<5.1	<5.6	<5.3	<5.1	<5	<5.1J	<5.4	<5	<5.1	<5.1
2-Nitrophenol	---	---	---	---	<5	<5.1	<5.1	<5.6	<5.3	<5.1	<5	<5.1J	<5.4	<5	<5.1	<5.1
3&4-Methylphenol ³	---	---	930	---	<2	<2	<2	<2.2	<2.1	<2	<2	<2J	<2.2	<2	<2	<2.1
3,3'-Dichlorobenzidine	---	---	0.13	0.21	<2	<2	<2	<2.2	<2.1	<2	<2	<2J	<2.2	<2	<2	<2.1
3-Nitroaniline	---	---	---	---	<5	<5.1	<5.1	<5.6	<5.3	<5.1	<5	<5.1J	<5.4	<5	<5.1	<5.1
4,6-Dinitro-2-methylphenol	---	---	1.5	13	<5	<5.1	<5.1	<5.6	<5.3	<5.1	<5	<5.1J	<5.4	<5	<5.1	<5.1
4-Bromophenyl Phenyl Ether	---	---	---	---	<2	<2	<2	<2.2	<2.1	<2	<2	<2J	<2.2	<2	<2	<2.1
4-Chloro-3-Methylphenol	---	---	1400	---	<5	<5.1	<5.1	<5.6	<5.3	<5.1	<5	<5.1J	<5.4	<5	<5.1	<5.1
4-Chloroaniline	---	---	0.37	---	<5	<5.1	<5.1	<5.6	1.1J	<5.1	<5	<5.1J	<5.4	<5	<5.1	<5.1
4-Chlorophenyl Phenyl Ether	---	---	---	---	<2	<2	<2	<2.2	<2.1	<2	<2	<2J	<2.2	<2	<2	<2.1
4-Nitroaniline	---	---	3.8	---	<5	<5.1	<5.1	<5.6	<5.3	<5.1	<5	<5.1J	<5.4	<5	<5.1	<5.1
4-Nitrophenol	---	---	---	---	<10	<10	<10	<11	<11	<10	<10	<10J	<11	<10	<10	<10
Acetophenone	---	---	1900	---	<2	<2	<2	<2.2	<2.1	<2	<2	<2J	<2.2	<2	<2	2.4
Atrazine	---	---	3	---	<2	<2	<2	<2.2	<2.1	<2	<2	<2J	<2.2	<2	<2	<2.1
Benzaldehyde	---	---	19	---	<5	<5.1	<5.1	<5.6	<5.3	<5.1	<5	<5.1J	<5.4	<5	<5.1	<5.1
Bis(2-chloro-1-methylethyl)ether	---	---	710	1400	<2	<2	<2	<2.2	<2.1	<2	<2	<2J	<2.2	<2	<2	<2.1
Bis(2-chloroethoxy)methane	---	---	59	---	<2	<2	<2	<2.2	<2.1	<2	<2	<2J	<2.2	<2	<2	<2.1
Bis(2-chloroethyl)ether	8.4	37	0.014	0.3	<2	<2	<2	<2.2	<2.1	<2	<2	<2J	<2.2	<2	<2	<2.1
Bis(2-ethylhexyl)phthalate	---	---	6	12	<2	<2	<2	<2.2	<2.1	<2	<2	<2J	<2.2	<2	<2	<2.1
Butyl benzyl phthalate	---	---	16	1500	<2	<2	<2	<2.2	<2.1	<2	<2	<2J	<2.2	<2	<2	<2.1
Caprolactam	---	---	9900	---	<2	<2	0.96J	<2.2	1.2J	<2	<2	<2J	<2.2	<2	<2	<2.1
Carbazole	---	---	---	---	<1	<1	<1	<1.1	<1.1	<1	<1	<1J	<1.1	<1	<1	<1
Dibenzofuran	---	---	7.9	---	<5	<5.1	<5.1	<5.6	<5.3	<5.1	<5	<5.1J	<5.4	<5	<5.1	<5.1
Diethyl Phthalate	---	---	15000	17000	<2	<2	<2	<2.2	<2.1	<2	<2	<2J	<2.2	<2	<2	<2.1
Dimethyl Phthalate	---	---	---	270000	<2	<2	<2	<2.2	<2.1	<2	<2	<2J	<2.2	<2	<2	<2.1
Di-n-butyl Phthalate	---	---	900	2000	<2	<2	<2	<2.2	<2.1	<2	<2	<2J	<2.2	<2	<2	<2.1
Di-n-octyl Phthalate	---	---	200	---	<2	<2	<2	<2.2	<2.1	<2	<2	<2J	<2.2	<2	<2	<2.1
Hexachlorobenzene	0.058	0.25	1	0.0028	<1	<1	<1	<1.1	<1.1	<1	<1	<1J	<1.1	<1	<1	<1
Hexachlorocyclopentadiene	0.042	0.18	50	40	<10	<10	<10	<11	<11	<10	<10	<10J	<11	<10	<10J	<10
Hexachloroethane	1.1	4.8	0.33	14	<2	<2	<2	<2.2	<2.1	<2	<2	<2J	<2.2	<2	<2	<2.1
Isophorone	---	---	78	350	<2	<										

Table 2
Former Tank Farm Area Groundwater Analytical Results - December 2016

Parameter	Residential Groundwater Concentration for Vapor Intrusion	Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or May 2016 Tap Water RSL	April 2016 PRWQS ¹	MW-3 12/19/2016	MW-5 12/19/2016	MW-7 12/14/2016	MW-9 12/19/2016	MW-13 12/14/2016	MW-14 12/20/2016	MW-15 12/20/2016	MW-16 12/23/2016	MW-17 12/20/2016	MW-17 DUP 12/20/2016	MW-18 12/20/2016	MW-19 12/23/2016
<i>Monitored Natural Attenuation Parameters Analytical Results (ug/L)</i>																
Iron	---	---	14000	---	22800	4270	NA	3600	NA	NA	NA	NA	4100	NA	2130	8760
Manganese	---	---	430	---	1290	291	NA	644	NA	NA	NA	NA	274	NA	74.7	1260
Alkalinity, Total	---	---	---	---	229000	251000	NA	335000	NA	NA	NA	NA	139000	NA	207000	156000
Iron, Ferric	---	---	---	---	17800J	4200J	NA	3100J	NA	NA	NA	NA	3500J	NA	2000J	8400J
Iron, Ferrous	---	---	---	---	5000J	<200J	NA	490J	NA	NA	NA	NA	600J	NA	<200J	320J
Methane	---	---	---	---	6.3	18.8	NA	0.13	NA	NA	NA	NA	21.8	NA	0.48	1860
Nitrogen, Nitrate	---	---	10000	---	<110J	<110J	NA	<110J	NA	NA	NA	NA	<110J	NA	580J	<110J
Nitrogen, Nitrate + Nitrite	---	---	---	---	<100	<100	NA	<100	NA	NA	NA	NA	<100	NA	590	<100
Nitrogen, Nitrite	---	---	1000	---	<10J	<10J	NA	<10J	NA	NA	NA	NA	<10J	NA	15J	<10J
Sulfate	---	---	---	---	27600	11500	NA	36500	NA	NA	NA	NA	<10000	NA	<10000	13600
Sulfide	---	---	---	---	<2000	<2000	NA	<2000	NA	NA	NA	NA	<2000	NA	<2000	<2000

Notes:

¹ April 2016 Puerto Rico Water Quality Standards Regulation for Class SG groundwater

² USEPA screening level and PRWQS are for 1,3-Dichloropropene. The USEPA and PREQB have not specifically established screening levels for cis-1,3-Dichloropropene or trans-1,3-Dichloropropene.

³ The Tapwater screening level applied to 3 & 4 methylphenol is the screening level for 3-methylphenol. This is a conservative level; it is lower than the screening level for 4-methylphenol.

--- No MCL, RSL, or PRWQS is available for this compound.

Detected values are shown in bold. Values which exceed the MCL, RSL, or PRWQS are shown shaded.

B - Compound found in associated method blank

J - Indicates an estimated value

JB - Value is estimated due to presence of compound in method blank.

NA - Sample was not analyzed for this parameter.

Table 3
Former Tank Farm Area 2016 Groundwater Analytical Results

Parameter	FTF Area COCs							Other FTF Area COPCs															
	Acetone	Methyl Isobutyl Ketone (MIBK)	Total Xylenes	Chloromethane	Methylene Chloride	1,2,4-Trimethylbenzene	1,4-Dioxane	Benzene	Ethylbenzene	Methyl Tert-Butyl Ether (MTBE)	Vinyl Chloride	1-Methylnaphthalene	2-Methylnaphthalene	Benzo(a)anthracene	Chrysene	Naphthalene	C9-C10 Aromatics (Unadj.)	C9-C12 Aliphatics (Unadj.)	C9-C12 Aliphatics (Unadj.)	C11-C22 Aromatics (Unadj.)	C11-C18 Aromatics (Unadj.)	C9-C18 Aliphatics	4-Chloroaniline
Screening Level	Concentration (ug/L)																						
USEPA	14000	6300	10000	190	5	15	0.46	5	700	14	2	1.1	36	0.012	3.4	0.17	5.5	100	100	5.5	5.5	100	0.37
PRWQS ¹	---	---	10000	---	46	---	---	5	530	14	0.25	---	---	0.038	0.038	0.17	---	---	---	---	---	---	
Residential GW VI	18000000	420000	290	230	630	21	2200	1.3	2.6	370	0.13	---	---	---	---	3.2	---	---	---	---	---	---	
Industrial GW VI	77000000	1800000	1200	960	7600	89	9600	5.6	12	1600	2.1	---	---	---	---	14	---	---	---	---	---	---	
Sample Round	MW-3																						
Q1-16	<10	<5	1.6	<1	<2	0.58 J	<0.1	0.32 J	0.45 J	<1	<1	59.2 J	52.4	<5	<1	3.57	NA	NA	NA	313	363	<100	<5
Q2-16	<25	<5	0.58 J	<2	<5	0.3 J	<0.11	<1	<1	<1	<1	35.9	33.3	<1.1	<1.1	2.19	232	108	342	256 B	289 B	30.7 JB	<5.6
Q3-16	<25	<5	1.19 J	<2	<5 J	0.42 J	0.262	0.23 J	0.32 J	<1	<1	70.7	73.2	<1	<1	3.63	377	125	506	440	524	30.6 JB	<5
Q4-16	<25	<5	<2	<2	<5	<1	<0.1	<1	<1	<1	<1	<1	<1	<0.05	<0.1	<0.1	44.4 JB	18.5 J	63.9 BJ	101 B	106 B	21.7 J	<5
	MW-5																						
Q1-16	<10	<5	2480	<1	<2	1.9 J	0.734	7.4	1040	11.8	<1	1 JJ	0.63 J	<1.1	<5.3	2.48	NA	NA	NA	82.8 J	85.5 J	<110	<5.3
Q2-16	<25	<5	273	<2	<5	0.28 J	0.568	3.3	76.7	6.1	<1	<1.1	<1.1	<1.1	<1.1	1.09	55.3	84.6	476	59.2 JB	62 JB	24.7 JB	<5.6
Q3-16	<25 J	<5	35	<2	<5	<1	0.76	2.3	3.1	8.2	<1	0.49 J	<1	<1	<1	0.729	50.3 B	30.3 J	115 BJ	55.6 J	65.4 J	39.5 JB	0.6 J
Q4-16	<25	<5	48	<2	<5	<1	0.598	0.23 J	16.6	5.7	<1	<1	<1	<0.051	<1	<0.1	23.8 JB	26.2 J	93.3 B	58.6 JB	60.7 JB	<100	<5.1
	MW-7																						
Q1-16	<10	<5	6.3	<1	<2	<2	1.72	<0.5	1.7	0.56 J	<1	<1.1 J	<5.2	<5.2	<1.1	<5.2	NA	NA	NA	<100	<100	<100	<5.3
Q2-16	<25	<5	16.75	<2	<5	<1	1.36	<1	8.1	<1	<1	<1.1	<1.1	<1.1	<1.1	<0.11	<50	<50	34.5 J	42.4 J	42.4 J	48.4 JB	<5.3
Q3-16	<25	<5	1.7 J	<2	<5 J	<1	1.57	<1	1.1	0.32 J	<1	<1	<1	<1	<1	0.1	31.5 JB	<50	53.5 B	<110	<110	<110	<5
Q4-16	<25	<5	0.71 J	<2	<5	<1	1.64	<1	1.1	0.34 J	<1	<1	<1	<1	<1	<0.1	18.5 JB	<50	18.4 JB	71.1 J	72.5 J	<100	<5.1
	MW-9																						
Q1-16	<10	<5	0.67 J	<1	<2	<2	0.479	<0.5	0.36 J	<1	<1	<1 J	<1 J	<1	<1	<0.1	NA	NA	NA	NA	NA	NA	<5.1
Q2-16	<25	<5	<2	<2	<5	<1	0.398	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	NA	NA	NA	NA	NA	NA	<5
Q3-16	<25	<5	<2	<2	<5	<1	0.669	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	16.2 JB	<50 J	9 JB	<110	<110	36 JB	<5
Q4-16	<25	<5	<2	<2	<5	<1	0.486	<1	<1	<1	<1	<1.1	<1.1	<0.051	<0.1	<0.11	12.1 JB	<50	45 JB	45 JB	<100	<5.6	
	MW-13																						
Q1-16	<10	<5	<1	<1	<2	<2	<0.1	<0.5	<1	<1	<1	<1 J	<5.2	<5.2	<5.2	<5.2	NA	NA	NA	<100	<100	<100	1.3 J
Q2-16	<25	<5	<2	<2	<5	<1	0.152	<1	<1	<1	<1	<1.1	<1.1	<1.1	<1.1	<0.11	<50	<50	31.7 J	NA	NA	NA	1.8 J
Q3-16	<25	<5	<2	<2	<5 J	<1	<0.1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	25.8 JB	<50	30.2 JB	<100	<100	36.8 JB	1.8 J
Q4-16	<25	<5	<2	<2	<5	<1	0.16	<1	<1	<1	<1	<1.1	<1.1	<0.053	<0.11	<0.11	13.4 JB	<50	10.4 JB	38.9 J	39.3 J	<100	1.1 J
	MW-14																						
Q1-16	<10	<5 J	<1	<1	<2	<2	1.76	<0.5	<1	<1	<1	<1 J	<5.2	<5.2	<5.2	<5.2	NA	NA	NA	<100	<100	<100	0.9 J
Q2-16	<25	<5	<2	<2	<5	<1	3.07	<															

Table 3
Former Tank Farm Area 2016 Groundwater Analytical Results

Parameter	FTF Area COCs						Other FTF Area COPCs															C11-C18 Aliphatics		
	Acetone	Methyl Isobutyl Ketone (MIBK)	Total Xylenes	Chloromethane	Methylene Chloride	1,2,4-Trimethylbenzene	1,4-Dioxane	Benzene	Ethylbenzene	Methyl Tert-Butyl Ether (MTBE)	Vinyl Chloride	1-Methylnaphthalene	2-Methylnaphthalene	Benzo(a)anthracene	Chrysene	Naphthalene	C9-C10 Aromatics (Unadj.)	C9-C12 Aliphatics (Unadj.)	C11-C12 Aromatics (Unadj.)	C11-C22 Aromatics (Unadj.)	C11-C18 Aliphatics (Unadj.)	4-Chloroaniline		
Screening Level	Concentration (ug/L)																							
USEPA	14000	6300	10000	190	5	15	0.46	5	700	14	2	1.1	36	0.012	3.4	0.17	5.5	100	100	5.5	5.5	100	0.37	
PRWQS ¹	---	---	10000	---	46	---	---	5	530	14	0.25	---	---	0.038	0.038	0.17	---	---	---	---	---	---	---	
Residential GW VI	18000000	420000	290	230	630	21	2200	1.3	2.6	370	0.13	---	---	---	---	3.2	---	---	---	---	---	---	---	
Industrial GW VI	77000000	1800000	1200	960	7600	89	9600	5.6	12	1600	2.1	---	---	---	---	14	---	---	---	---	---	---	---	
	MW-17																							
Q1-16	<10	<5	0.94 J	<1	<2	<2	12.4	<0.5	<1	3.8	<1	<1	2.5 J	<1	<1	<5.4	NA	NA	NA	178	181	<110	<5.2	
Q2-16	<25	<5	<2	<2	<5	<1	13.6	<1	<1	1.3	<1	<1.1	<1.1	<1.1	<1.1	<0.11	102	70.7	174	168	172	78.1 JB	7.5	
Q3-16	<25 J	<5	<2	<2	<5	<1	6.2	<1	<1	2.3	<1	<1	<1	<1	<1	<0.1	111 B	56	167 B	164	167	120 B	<5.1 J	
Q4-16	<25	<5	<2	<2	<5	<1	16.7	<1	<1	1.1	<1	<1.1	<1.1	<0.054	<0.11	<0.11	66.9 B	57.6 J	126 BJ	156 B	156 B	68.6 J	<5.4	
	MW-18																							
Q1-16	<10	<5	4.7	<1	<2	<2	2.11	<0.5	1.5	0.34 J	0.26 J	<1.1	<1.1	<5.1	<5.1	<0.11	NA	NA	NA	135	139	<100	<5.4	
Q2-16	<25	<5	0.69 J	<2	<5	<1	0.723	0.3 J	<1	<1	<1	2.6	<1.1	<1.1	<1.1	<0.11	128	67.9	197	136	141	87.4 JB	<5.4	
Q3-16	<25	<5	1.3 J	<2	<5	0.21 J	2.92	0.6 J	<1	<1	<1	17.6	2.5	<1	<1	<0.1	277	76.6 J	358 J	256 B	263	39.6 JB	<5	
Q4-16	<25	<5	<2	<2	<5	<1	<0.1	<1	<1	<1	<1	<1	<1	<0.051	<0.1	<0.1	12 JB	<50 J	12.1 JB	48.6 JB	48.6 JB	17.8 J	<5.1	
	MW-19																							
Q2-16	<1300	<250	19850	<100	<250	<50	<0.11	<50	6460	<50	<50	2	2.3	<1.1	<1.1	2.75	100	65.3	19500	78.4 JB	85.3 JB	72.7 J	<5.3	
Q3-16	<630	<130	4736	<50	<130	<25	0.736	<25	1840	<25	<25	1.6	1.7	0.47 J	<1	2.06	73.7 B	729 J	7410 J	133 JB	135 JB	101 JB	<5.1	
Q4-16	<1300	<250	6987	<100	<250	32.1 J	0.262	<50	3020	<50	<50	1.4	1.4	0.427	0.106	1.51	68 B	2430 J	8900 J	45.7 J	51.2 J	<100	<5.1	

Notes:

¹ April 2016 Puerto Rico Water Quality Standards Regulation for Class SG groundwater

--- No MCL, RSL, or PRWQS is available for this compound.

Values which exceed the MCL, RSL, or PRWQS are shown shaded.

B - Compound found in associated method blank.

J - Indicates an estimated value

JB - Value is estimated due to presence of compound in method blank.

NA - Sample was not analyzed for this parameter.

Table 4
Mann-Kendall Results for 1,4-Dioxane (Former Tank Farm Area)

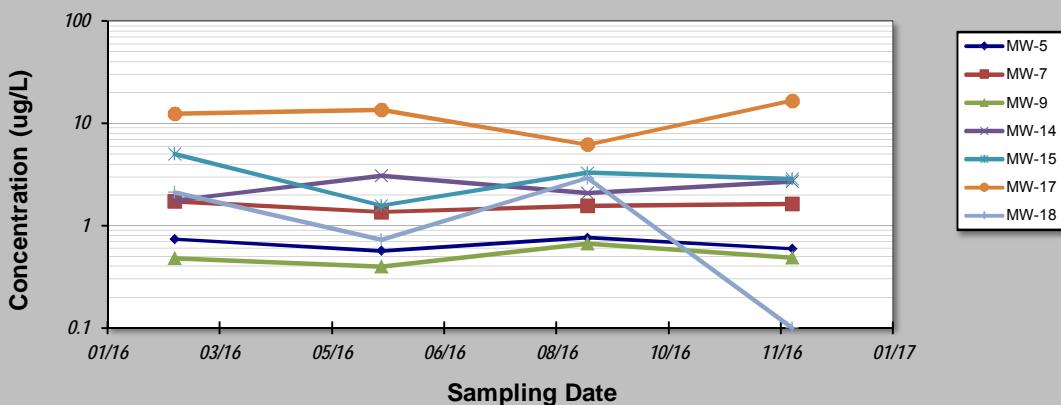
GSI MANN-KENDALL TOOLKIT for Constituent Trend Analysis

Evaluation Date: **23-Mar-17**
Facility Name: **BMS Humacao, PR**
Conducted By: **Terry Taylor**

Job ID: **Former Tank Farm Area**
Constituent: **1,4-Dioxane**
Concentration Units: **ug/L**

Sampling Point ID: **MW-5 MW-7 MW-9 MW-14 MW-15 MW-17 MW-18**

Sampling Event	Sampling Date	1,4-DIOXANE CONCENTRATION (ug/L)						
1	1-Mar-16	0.734	1.72	0.479	1.76	5	12.4	2.11
2	1-Jun-16	0.568	1.36	0.398	3.07	1.57	13.6	0.723
3	1-Sep-16	0.76	1.57	0.669	2.08	3.28	6.2	2.92
4	1-Dec-16	0.598	1.64	0.486	2.71	2.88	16.7	0.1
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:	0.14	0.10	0.23	0.25	0.44	0.36	0.88	
Mann-Kendall Statistic (S):	0	0	2	2	-2	2	-2	
Confidence Factor:	37.5%	37.5%	62.5%	62.5%	62.5%	62.5%	62.5%	
Concentration Trend:	Stable	Stable	No Trend	No Trend	Stable	No Trend	Stable	



Notes:

- At least four independent sampling events per well are required for calculating the trend. Methodology is valid for 4 to 40 samples.
- Confidence in Trend = Confidence (in percent) that constituent concentration is increasing ($S>0$) or decreasing ($S<0$): >95% = Increasing or Decreasing; $\geq 90\%$ = Probably Increasing or Probably Decreasing; $< 90\%$ and $S>0$ = No Trend; $< 90\%$, $S\leq 0$, and $COV \geq 1$ = No Trend; $< 90\%$ and $COV < 1$ = Stable.
- Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

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Table 5
Mann-Kendall Results for C11-C22 Aromatics (Former Tank Farm Area)

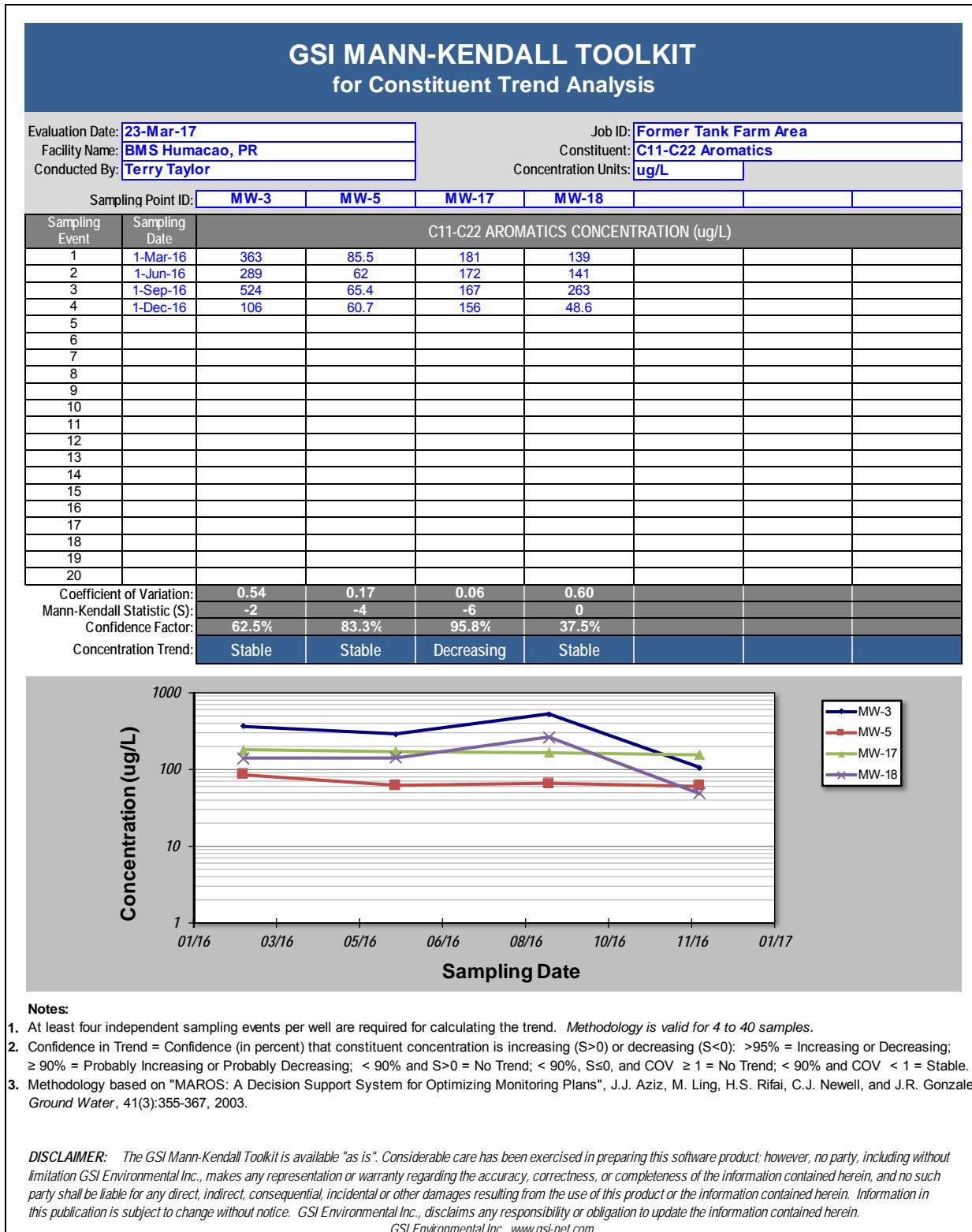


Table 6
Mann-Kendall Results for 4-Chloroaniline (Former Tank Farm Area)

GSI MANN-KENDALL TOOLKIT for Constituent Trend Analysis						
Evaluation Date:	23-Mar-17		Job ID:	Former Tank Farm Area		
Facility Name:	BMS Humacao, PR		Constituent:	4-Chloroaniline		
Conducted By:	Terry Taylor		Concentration Units:	ug/L		
Sampling Point ID:	MW-13					
Sampling Event	Sampling Date	4-CHLOROANILINE CONCENTRATION (ug/L)				
1	1-Mar-16	1.3				
2	1-Jun-16	1.8				
3	1-Sep-16	1.8				
4	1-Dec-16	1.1				
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
Coefficient of Variation:	0.24					
Mann-Kendall Statistic (S):	-1					
Confidence Factor:	50.0%					
Concentration Trend:	Stable					

MW-13

Concentration (ug/L)

Sampling Date

Notes:

- At least four independent sampling events per well are required for calculating the trend. Methodology is valid for 4 to 40 samples.
- Confidence in Trend = Confidence (in percent) that constituent concentration is increasing ($S>0$) or decreasing ($S<0$): >95% = Increasing or Decreasing; $\geq 90\%$ = Probably Increasing or Probably Decreasing; < 90% and $S>0$ = No Trend; < 90%, $S\leq 0$, and $COV \geq 1$ = No Trend; < 90% and $COV < 1$ = Stable.
- Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

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Table 7
Mann-Kendall Results for 1-Methylnaphthalene (Former Tank Farm Area)

GSI MANN-KENDALL TOOLKIT for Constituent Trend Analysis							
Evaluation Date:	23-Mar-17		Job ID:	Former Tank Farm Area			
Facility Name:	BMS Humacao, PR		Constituent:	1-Methylnaphthalene			
Conducted By:	Terry Taylor		Concentration Units:	ug/L			
Sampling Point ID:	MW-3	MW-18					
Sampling Event	Sampling Date	1-METHYLNAPHTHALENE CONCENTRATION (ug/L)					
1	1-Mar-16	59.2	1.1				
2	1-Jun-16	35.9	2.6				
3	1-Sep-16	70.7	17.6				
4	1-Dec-16	1	1				
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
Coefficient of Variation:	0.74	1.44					
Mann-Kendall Statistic (S):	-2	0					
Confidence Factor:	62.5%	37.5%					
Concentration Trend:	Stable	No Trend					
<p>Concentration (ug/L)</p> <p>Sampling Date</p> <p>MW-3</p> <p>MW-18</p>							
<p>Notes:</p> <ol style="list-style-type: none"> At least four independent sampling events per well are required for calculating the trend. Methodology is valid for 4 to 40 samples. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing ($S>0$) or decreasing ($S<0$): >95% = Increasing or Decreasing; $\geq 90\%$ = Probably Increasing or Probably Decreasing; < 90% and $S>0$ = No Trend; < 90%, $S\leq 0$, and $COV \geq 1$ = No Trend; < 90% and $COV < 1$ = Stable. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, <i>Ground Water</i>, 41(3):355-367, 2003. 							
<p>DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.</p>							
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Table 8
Former Brule Incinerator Area Groundwater Analytical Results - December 2016

Parameter	Residential Groundwater Concentration for Vapor Intrusion	Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or May 2016 Tap Water RSL	April 2016 PRWQS ¹	BR-1 12/21/2016	BR-1 DUP 12/21/2016	BR-2 12/21/2016	BR-3 12/21/2016	BR-4 12/21/2016
Volatile Organic Compounds Analytical Results (ug/L)									
1,1,1-Trichloroethane	6000	25000	200	200	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	2.4	11	0.076	1.7	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	4	18	5	5	<1	<1	<1	<1	<1
1,1-Dichloroethane	6.2	27	2.8	---	<1	<1	<1	<1	<1
1,1-Dichloroethylene	160	690	7	7	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	---	---	7	---	<2	<2	<2	<2	<2
1,2,4-Trichlorobenzene	25	110	70	35	<2	<2	<2	<2	<2
1,2,4-Trimethylbenzene	21	89	15	---	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	0.02	0.24	0.2	---	<5	<5	<5	<5	<5
1,2-Dibromoethane	0.13	0.58	0.05	0.052	<2	<2	<2	<2	<2
1,2-Dichlorobenzene	1900	8100	600	420	1.1	1	0.46 J	<1	<1
1,2-Dichloroethane	1.8	7.8	5	3.8	<1	<1	<1	<1	<1
1,2-Dichloroethylene (cis)	---	---	70	70	<1	<1	<1	<1	<1
1,2-Dichloroethylene (trans)	---	---	100	100	<1	<1	<1	<1	<1
1,2-Dichloropropane	1.9	8.4	5	5	<1	<1	<1	<1	<1
1,3-Butadiene	0.027	0.12	0.018	---	<5	<5	<5	<5	<5
1,3-Dichlorobenzene	---	---		320	0.58 J	<1	<1	<1	<1
1,3-Dichloropropene (cis) ²	---	---	0.47	3.4	<1	<1	<1	<1	<1
1,3-Dichloropropene (trans) ²	---	---	0.47	3.4	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	1.9	8.3	75	63	0.56 J	0.57 J	<1	<1	<1
1,4-Dioxane	2200	9600	0.46	---	105 J	220 J	19.3	27.6	0.311
2-Butanone (MEK)	1800000	7500000	5600	---	<5	<5	<5	<5	<5
2-Hexanone	6200	26000	38	---	<10	<10	<10	<10	<10
Acetone	18000000	77000000	14000	---	12.5 J	<25	<25	<25	<25
Benzene	1.3	5.6	5	5	<1	<1	<1	<1	<1
Benzyl Chloride	2.5	11	0.089	---	<2	<2	<2	<2	<2
Bromochloromethane	560	2400	83	---	<1	<1	<1	<1	<1
Bromodichloromethane	0.69	3	0.13	5.5	<1	<1	<1	<1	<1
Bromoform	85	370	3.3	43	<1	<1	<1	<1	<1
Bromomethane	15	63	7.5	---	<2	<2	<2	<2	<2
Carbon Disulfide	1000	4300	810	---	<2	<2	<2	<2	<2
Carbon Tetrachloride	0.34	1.5	5	2.3	<1	<1	<1	<1	<1

Table 8
Former Brule Incinerator Area Groundwater Analytical Results - December 2016

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Chlorobenzene	310	1300	100	100	1.1	1.1	0.37 J	<1	<1
Chlorodibromomethane	---	---	0.87	4	<1	<1	<1	<1	<1
Chloroethane	20000	82000	21000	---	<2	<2	<2	<2	<2
Chloroform	0.66	2.9	8	57	<1	<1	<1	<1	<1
Chloromethane	230	960	190	---	<2	<2	<2	<2	<2
Cyclohexane	820	3500	13000	---	3.9	4.1	0.6 J	<1	<1
Dichlorodifluoromethane	6	25	200	---	<2	<2	<2	<2	<2
Ethylbenzene	2.6	12	700	530	<1	<1	<1	<1	<1
Freon 113	1200	5100	55000	---	<1	<1	<1	<1	<1
Isopropyl Alcohol	450000	1900000	410	---	<100	<100	<100	<100	<100
Isopropylbenzene	630	2600	450	---	2.4	2.7	6	<1	<1
Methanol	86000000	360000000	20000	---	<200	<200	<200	<200	<200
Methyl Acetate	---	---	20000	---	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone (MIBK)	420000	1800000	6300	---	<5	<5	<5	<5	<5
Methyl Tert-Butyl Ether (MTBE)	370	1600	14	14	12.3	12.8	2.7	0.56 J	<1
Methylcyclohexane	---	---	---	---	<1	<1	0.5 J	<1	<1
Methylene Chloride	630	7600	5	46	<5	<5	<5	<5	<5
p-Isopropyl Toluene	---	---	---	---	<1	<1	<1	<1	<1
Styrene	7000	29000	100	---	<1	<1	<1	<1	<1
tert-Amyl Alcohol	4100	17000	6.3	---	<20	<20	<20	<20	<20
tert-Butyl alcohol	---	---	---	1400	134 J	138 J	15.9 J	<20J	<20J
Tetrachloroethylene	12	50	5	5	<1	<1	<1	<1	<1
Tetrahydrofuran	590000	2500000	3400	---	<5	<5	<5	<5	<5
Toluene	15000	63000	1000	1000	<1	<1	<1	<1	<1
Total Xylenes	290	1200	10000	10000	<2	<2	<2	<2	<2
Trichloroethylene	0.94	5.9	5	5	<1	<1	<1	<1	<1
Trichlorofluoromethane	---	---	5200	---	<2	<2	<2	<2	<2
Vinyl Chloride	0.13	2.1	2	0.25	<1	<1	<1	<1	<1
Low Molecular Weight Alcohols Analytical Results (ug/L)									
1-Propanol	---	---	---	---	<100	<100	<100	<100	<100
2-Butanol	58000000	---	24000	---	<100	<100	<100	<100	<100
Ethanol	---	---	---	10000	<100	<100	<100	<100	<100
Isobutyl Alcohol	---	---	5900	---	<100	<100	<100	<100	<100
n-Butanol	---	---	2000	---	<100	<100	<100	<100	<100

Table 8
Former Brule Incinerator Area Groundwater Analytical Results - December 2016

Parameter	Residential Groundwater Concentration for Vapor Intrusion	Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or May 2016 Tap Water RSL	April 2016 PRWQS ¹	BR-1 12/21/2016	BR-1 DUP 12/21/2016	BR-2 12/21/2016	BR-3 12/21/2016	BR-4 12/21/2016
Polycyclic Aromatic Hydrocarbons Analytical Results (ug/L)									
1-Methylnaphthalene	---	---	1.1	---	<1	<1.1	<1.1	<1	<1.1
2-Methylnaphthalene	---	---	36	---	<1	<1.1	<1.1	<1	<1.1
Acenaphthene	---	---	530	670	<1	<1.1	<1.1	<1	<1.1
Acenaphthylene	---	---	---	---	<1	<1.1	<1.1	<1	<1.1
Anthracene	---	---	1800	8300	<1	<1.1	<1.1	<1	<1.1
Benzo(a)anthracene	---	---	0.012	0.038	<0.05	<0.055	<0.053	<0.051	<0.055
Benzo(a)pyrene	---	---	0.2	0.038	<0.05	<0.055	<0.053	<0.051	<0.055
Benzo(b)fluoranthene	---	---	0.034	0.038	<0.1	<0.11	<0.11	<0.1	<0.11
Benzo(g,h,i)perylene	---	---	---	210	<1	<1.1	<1.1	<1	<1.1
Benzo(k)fluoranthene	---	---	0.34	0.038	<0.1	<0.11	<0.11	<0.1	<0.11
Chrysene	---	---	3.4	0.038	<0.1	<0.11	<0.11	<0.1	<0.11
Dibenz(a,h)anthracene	---	---	0.0034	0.038	<0.1	<0.11	<0.11	<0.1	<0.11
Fluoranthene	---	---	800	130	0.54 J	0.5 J	<1.1	<1	<1.1
Fluorene	---	---	290	1100	<1	<1.1	<1.1	<1	<1.1
Indeno(1,2,3-cd)pyrene	---	---	0.034	0.038	<0.1	<0.11	<0.11	<0.1	<0.11
Naphthalene	3.2	14	0.17	0.17	<0.1	<0.11	<0.11	<0.1	<0.11
Phenanthrene	---	---	---	18	<1	<1.1	<1.1	<1	<1.1
Pyrene	---	---	120	830	<1	<1.1	<1.1	<1	<1.1
Volatile Petroleum Hydrocarbons Analytical Results (ug/L)									
C5-C8 Aliphatics	---	---	1300	---	23.2 J	23.4 J	16.6 J	<50	<50
C5-C8 Aliphatics (Unadj.)	---	---	1300	---	32.8 J	32.9 J	18.8 J	<50	<50
C9-C10 Aromatics (Unadj.)	---	---	5.5	---	20.1 JB	21.5 JB	64.5 B	12.4 JB	14 JB
C9-C12 Aliphatics	---	---	100	---	13.9 J	9.9 J	38.5 J	<50J	<50J
C9-C12 Aliphatics (Unadj.)	---	---	100	---	34 JB	32.2 JB	104 BJ	11.2 JB	11.2 JB
Extractable Petroleum Hydrocarbons Analytical Results (ug/L)									
C11-C22 Aromatics	---	---	5.5	---	73.6 JB	67.3 JB	95.9 JB	<110	<110
C11-C22 Aromatics (Unadj.)	---	---	5.5	---	73.6 JB	67.3 JB	95.9 JB	<110	<110
C19-C36 Aliphatics	---	---	60000	---	<100	<100	<110	<110	<110
C9-C18 Aliphatics	---	---	100	---	<100	<100	<110	<110	<110

Table 8
Former Brule Incinerator Area Groundwater Analytical Results - December 2016

Parameter	Residential Groundwater Concentration for Vapor Intrusion	Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or May 2016 Tap Water RSL	April 2016 PRWQS ¹	BR-1 12/21/2016	BR-1 DUP 12/21/2016	BR-2 12/21/2016	BR-3 12/21/2016	BR-4 12/21/2016
Semivolatile Organic Compounds Analytical Results (ug/L)									
1,1'-Biphenyl	23	95	0.83	---	<1	<1.1	<1.1	<1	<1.1
1,2,4,5-Tetrachlorobenzene	---	---	1.7	---	<2	<2.2	<2.1	<2	<2.2
1,3-Hexachlorobutadiene	0.21	0.93	0.14	4.4	<1	<1.1J	<1.1J	<1J	<1.1J
2,3,4,6-Tetrachlorophenol	---	---	240	---	<5	<5.5	<5.3	<5.1	<5.5
2,4,5-Trichlorophenol	---	---	1200	---	<5	<5.5	<5.3	<5.1	<5.5
2,4,6-Trichlorophenol	---	---	4.1	14	<5	<5.5	<5.3	<5.1	<5.5
2,4-Dichlorophenol	---	---	46	77	<2	<2.2	<2.1	<2	<2.2
2,4-Dimethylphenol	---	---	360	380	<5	<5.5	<5.3	<5.1	<5.5
2,4-Dinitrophenol	---	---	39	69	<10	<11	<11	<10	<11
2,4-Dinitrotoluene	---	---	0.24	1.1	<1	<1.1	<1.1	<1	<1.1
2,6-Dinitrotoluene	---	---	0.049	---	<1	<1.1	<1.1	<1	<1.1
2-Chloronaphthalene	---	---	750	1000	<2	<2.2	<2.1	<2	<2.2
2-Chlorophenol	---	---	91	81	<5	<5.5	<5.3	<5.1	<5.5
2-Methylphenol	---	---	930	---	<2	<2.2	<2.1	<2	<2.2
2-Nitroaniline	---	---	190	---	<5	<5.5	<5.3	<5.1	<5.5
2-Nitrophenol	---	---	---	---	<5	<5.5	<5.3	<5.1	<5.5
3&4-Methylphenol ³	---	---	930	---	<2	<2.2	<2.1	<2	<2.2
3,3'-Dichlorobenzidine	---	---	0.13	0.21	<2	<2.2	<2.1	<2	<2.2
3-Nitroaniline	---	---	---	---	<5	<5.5	<5.3	<5.1	<5.5
4,6-Dinitro-2-methylphenol	---	---	1.5	13	<5	<5.5	<5.3	<5.1	<5.5
4-Bromophenyl Phenyl Ether	---	---	---	---	<2	<2.2	<2.1	<2	<2.2
4-Chloro-3-Methylphenol	---	---	1400	---	<5	<5.5	<5.3	<5.1	<5.5
4-Chloroaniline	---	---	0.37	---	<5	1.5 J	<5.3	<5.1	<5.5
4-Chlorophenyl Phenyl Ether	---	---	---	---	<2	<2.2	<2.1	<2	<2.2
4-Nitroaniline	---	---	3.8	---	<5	<5.5	<5.3	<5.1	<5.5
4-Nitrophenol	---	---	---	---	<10	<11	<11	<10	<11
Acetophenone	---	---	1900	---	<2	<2.2	<2.1	<2	<2.2
Atrazine	---	---	3	---	<2	<2.2	<2.1	<2	<2.2
Benzaldehyde	---	---	19	---	<5	<5.5	<5.3	<5.1	<5.5
Bis(2-chloro-1-methylethyl)ether	---	---	710	1400	<2	<2.2	<2.1	<2	<2.2
Bis(2-chloroethoxy)methane	---	---	59	---	<2	<2.2	<2.1	<2	<2.2
Bis(2-chloroethyl)ether	8.4	37	0.014	0.3	<2	<2.2	<2.1	<2	<2.2
Bis(2-ethylhexyl)phthalate	---	---	6	12	<2	3.8	<2.1	<2	<2.2
Butyl benzyl phthalate	---	---	16	1500	<2J	<2.2	<2.1	<2	<2.2

Table 8
Former Brule Incinerator Area Groundwater Analytical Results - December 2016

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Caprolactam	---	---	9900	---	<2	<2.2	<2.1	<2	<2.2
Carbazole	---	---	---	---	<1	<1.1	<1.1	<1	<1.1
Dibenzofuran	---	---	7.9	---	<5	<5.5	<5.3	<5.1	<5.5
Diethyl Phthalate	---	---	15000	17000	<2	<2.2	<2.1	<2	<2.2
Dimethyl Phthalate	---	---	---	270000	<2	<2.2	<2.1	<2	<2.2
Di-n-butyl Phthalate	---	---	900	2000	<2	<2.2	<2.1	<2	<2.2
Di-n-octyl Phthalate	---	---	200	---	<2	<2.2	<2.1	<2	<2.2
Hexachlorobenzene	0.058	0.25	1	0.0028	<1	<1.1	<1.1	<1	<1.1
Hexachlorocyclopentadiene	0.042	0.18	50	40	<10	<11	<11	<10	<11
Hexachloroethane	1.1	4.8	0.33	14	<2	<2.2	<2.1	<2	<2.2
Isophorone	---	---	78	350	<2	<2.2	<2.1	<2	<2.2
Nitrobenzene	50	220	0.14	17	<2	<2.2	<2.1	<2	<2.2
N-Nitrosodi-n-propylamine	---	---	0.011	0.05	<2	<2.2	<2.1	<2	<2.2
N-Nitrosodiphenylamine	---	---	12	---	<5	<5.5	<5.3	<5.1	<5.5
Pentachlorophenol	---	---	1	1	<4J	<4.4	<4.3	<4	<4.4
Phenol	---	---	5800	10000	<2	<2.2	<2.1	<2	<2.2
Monitored Natural Attenuation Parameters Analytical Results (ug/L)									
Iron	---	---	14000	---	NA	NA	3320	NA	NA
Manganese	---	---	430	---	NA	NA	166	NA	NA
Alkalinity, Total	---	---	---	---	NA	NA	289000	NA	NA
Iron, Ferric	---	---	---	---	NA	NA	3300J	NA	NA
Iron, Ferrous	---	---	---	---	NA	NA	<200J	NA	NA
Methane	---	---	---	---	NA	NA	4	NA	NA
Nitrogen, Nitrate	---	---	10000	---	NA	NA	<110J	NA	NA
Nitrogen, Nitrate + Nitrite	---	---	---	---	NA	NA	<100	NA	NA
Nitrogen, Nitrite	---	---	1000	---	NA	NA	<10J	NA	NA
Sulfate	---	---	---	---	NA	NA	38600	NA	NA
Sulfide	---	---	---	---	NA	NA	<2000	NA	NA

Notes:

¹ April 2016 Puerto Rico Water Quality Standards Regulation for Class SG groundwater

² USEPA screening level and PRWQS are for 1,3-Dichloropropene. The USEPA and PREQB have not specifically established screening levels for cis-1,3-Dichloropropene or trans-1,3-Dichloropropene.

³ The Tapwater screening level applied to 3 & 4 methylphenol is the screening level for 3-methylphenol. This is a conservative level; it is lower than the screening level for 4-methylphenol.

--- No MCL, RSL, or PRWQS is available for this compound.

Detected values are shown in bold. Values which exceed the MCL, RSL, or PRWQS are shown shaded.

B - Compound found in associated method blank

J - Indicates an estimated value

JB - Value is estimated due to presence of compound in method blank.

NA - Sample was not analyzed for this parameter.

Table 9
Former Brule Incinerator Area 2016 Groundwater Analytical Results

Parameter	1,4-Dioxane	Naphthalene	C9-C10 Aromatics (Unadj.)	C9-C12 Aliphatics (Unadj.)	C11-C22 Aromatics	C11-C22 Aromatics (Unadj.)	4-Chloroaniline
Screening Level	Concentration (ug/L)						
USEPA	0.46	0.17	5.5	100	5.5	5.5	0.37
PRWQS ¹	---	0.17	---	---	---	---	---
Residential GW VI	2200	3.2	---	---	---	---	---
Industrial GW VI	9600	14	---	---	---	---	---
Sample Round	BR-1						
Q1-16	156	0.13	NA	NA	81.1 J	81.1 J	0.97 J
Q2-16	123	0.454	<50	<50	<100	<100	1 J
Q3-16	299	<0.1	30.7 JB	39.9 JB	55.6 J	55.6 J	1.2 J
Q4-16	105 J	<0.1	20.1 JB	34 JB	73.6 JB	73.6 JB	<5
	BR-2						
Q1-16	15.8	<0.1	NA	NA	<100	<100	<5
Q2-16	14.7	<0.11	25.9 J	31.6 J	<110	<110	<5.3
Q3-16	19	<0.1	74 B	102 B	73.6 J	74.2 J	<5.1
Q4-16	19.3	<0.11	64.5 B	104 BJ	95.9 JB	95.9 JB	<5.3
	BR-3						
Q1-16	55.7	<0.1	NA	NA	<110	<110	<5
Q2-16	42.2	<0.11	<50	<50	<110	<110	<5.3
Q3-16	49.5	<0.1	16.8 JB	13.4 JB	<100	<100	<5
Q4-16	27.6	<0.1	12.4 JB	11.2 JB	<110	<110	<5.1
	BR-4						
Q2-16	1.49	<0.1	30.6 J	37.2 J	44.3 JB	44.3 JB	<5
Q3-16	0.877	<0.1	14.2 JB	9.5 JB	37.5 J	37.5 J	<5.1
Q4-16	0.311	<0.11	14 JB	11.2 JB	<110	<110	<5.5

Notes:

¹ April 2016 Puerto Rico Water Quality Standards Regulation for Class SG groundwater

--- No MCL, RSL, or PRWQS is available for this compound.

Values which exceed the MCL, RSL, or PRWQS are shown shaded.

B - Compound found in associated method blank

J - Indicates an estimated value

JB - Value is estimated due to presence of compound in method blank.

NA - Sample was not analyzed for this parameter.

Table 10
Mann-Kendall Results for 1,4-Dioxane (Former Brule Incinerator Area)

GSI MANN-KENDALL TOOLKIT for Constituent Trend Analysis						
Evaluation Date: 23-Mar-17			Job ID: Former Brule Incinerator Area			
Facility Name: BMS Humacao, PR			Constituent: 1,4-Dioxane			
Conducted By: Terry Taylor			Concentration Units: ug/L			
Sampling Point ID:		BR-1	BR-2	BR-3		
Sampling Event	Sampling Date	1,4-DIOXANE CONCENTRATION (ug/L)				
1	1-Mar-17	156	15.8	55.7		
2	1-Jun-17	123	14.7	42.2		
3	1-Sep-17	299	19	49.5		
4	1-Dec-17	105	19.3	27.6		
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
Coefficient of Variation:	0.52	0.13	0.28			
Mann-Kendall Statistic (S):	-2	4	-4			
Confidence Factor:	62.5%	83.3%	83.3%			
Concentration Trend:	Stable	No Trend	Stable			

Sampling Date	BR-1 (ug/L)	BR-2 (ug/L)	BR-3 (ug/L)
03/17	~150	~15	~60
06/17	~100	~15	~40
09/17	~200	~20	~50
12/17	~100	~20	~30

Notes:

- At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
- Confidence in Trend = Confidence (in percent) that constituent concentration is increasing ($S>0$) or decreasing ($S<0$): $>95\% =$ Increasing or Decreasing; $\geq 90\% =$ Probably Increasing or Probably Decreasing; $< 90\% \text{ and } S>0 =$ No Trend; $< 90\%, S\leq 0,$ and $COV \geq 1 =$ No Trend; $< 90\% \text{ and } COV < 1 =$ Stable.
- Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

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Table 11
Building 5 Area Groundwater Analytical Results - December 2016

Parameter	Residential Groundwater Concentration for Vapor Intrusion	Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or May 2016 Tap Water RSL	April 2016 PRWQS ¹	A-1R4 12/8/2016	A-2R2 12/8/2016	D-1R 12/13/2016	D-1R DUP 12/13/2016	E-1R 12/13/2016	G-1R3 12/13/2016	MW-11 12/16/2016	S-28 12/12/2016	S-29R 12/16/2016	S-30 12/16/2016	S-31R2 12/16/2016	S-32 12/12/2016	S-33 12/8/2016	S-34 12/8/2016	S-35D 12/9/2016	S-35S 12/9/2016	S-36 12/9/2016	S-37 12/9/2016	S-38 12/16/2016	S-39D 12/12/2016	S-39S 12/12/2016	UP-1 12/6/2016	UP-2 12/6/2016
Building 5 Area COC Analytical Results (ug/L)																											
Benzene	1.3	5.6	5	5	5.6	0.26 J	<1	<1	0.79 J	<25	<1	<1	<1	0.43 J	2.7	3.7	0.23 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Ethylbenzene	2.6	12	700	530	122	2.1	<1	<1	<1	23300	<1	<1	<1	3340	32900	41.9	<1	<1	<1	<1	<1	<1	<1	<1	218		
Toluene	15000	63000	1000	1000	0.62 J	0.38 J	<1	<1	<1	84.8	<1	<1	<1	0.91 J	50	<1	<1	<1	<1	<1	<1	<1	<1	0.24 J	<1	<1	
Total Xylenes	290	1200	10000	10000	428.5 E	742	<2	<2	0.4 J	65980	<2	<2	<2	5960	58500	26.6	<2	<2	<2	<2	<2	<2	<2	<2	903	<2	<2
Acetone	18000000	77000000	14000	---	<25	<25	<25	<25	<630	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	
Methyl Isobutyl Ketone (MIBK)	420000	1800000	6300	---	2.1 J	<5	<5	<5	<130	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	
Isopropyl Alcohol	450000	1900000	410	---	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100		
Methanol	86000000	360000000	20000	---	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200		
Other Volatile Organic Compounds Analytical Results (ug/L)																											
1,1,1-Trichloroethane	6000	25000	200	200	<1	<1	<1	<1	<1	<25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,1,2,2-Tetrachloroethane	2.4	11	0.076	1.7	<1	<1	<1	<1	<1	<25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,1,2-Trichloroethane	4	18	5	5	<1	<1	<1	<1	<1	<25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,1-Dichloroethane	6.2	27	2.8	---	<1	<1	<1	<1	<1	<25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,1-Dichloroethylene	160	690	7	7	<1	<1	<1	<1	<1	<25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,2,3-Trichlorobenzene	0	0	7	---	<2	<2	<2	<2	<2	<50	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
1,2,4-Trichlorobenzene	25	110	70	35	<2	<2	<2	<2	<2	<50	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
1,2,4-Trimethylbenzene	21	89	15	---	0.43 J	<1	<1	<1	<1	<25	<1	<1	<1	<1	<1	3.9	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,2-Dibromo-3-chloropropane	0.02	0.24	0.2	---	<5J	<5J	<5	<5	<5	<130	<5	<5	<5	<5	<5	<5	<5J	<5J	<5J	<5J	<5J	<5J	<5J	<5J	<5J		
1,2-Dibromoethane	0.13	0.58	0.05	0.052	<2	<2	<2	<2	<2	<50	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
1,2-Dichlorobenzene	1900	8100	600	420	<1	<1	<1	<1	<1	<25	<1	<1	<1	<1	<1	0.55 J	<1	<1	<1	<1	<1	<1	<1	<1	<1		
1,2-Dichloroethane	1.8	7.8	5	3.8	<1	<1	<1	<1	<1	<25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,2-Dichloroethylene (cis)	---	---	70	70	<1	<1	<1	<1	<1	<25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,2-Dichloroethylene (trans)	---	---	100	100	<1	<1	<1	<1	<1	<25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,2-Dichloropropane	1.9	8.4	5	5	<1	<1	<1	<1	<1	<25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,3-Butadiene	0.027	0.12	0.018	---	<5	<5	<2J	<2J	<2J	<50J	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		
1,3-Dichlorobenzene	---	---	320	<1	<1	<1	<1	<1	<25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
1,3-Dichloropropene (cis) ²	---	---	0.47	3.4	<1	<1	<1	<1	<1	<25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
1,3-Dichloropropene (trans) ²	---	---	0.47	3.4	<1	<1	<1	<1	<1	<25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
1,4-Dioxane	2200	9600	0.46	---	37.3	0.516	2230	1870	58.7 J	0.18	339	87	12.5	1190	22	3.72	18.8	13.5	25	110	0.29	19.9	229	51.6	51.6 J	0.91	324
2-Butanone (MEK)	1800000	7500000	5600	---	<5	<5	<5	<5	<5	<130	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	
2-Hexanone	6200	26000	38	---	<10	<10	<10	<10	<10	<250	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		
Benzyl Chloride	2.5	11	0.089	---	<2	<2	<2	<2	<2	<50	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
Bromochloromethane	560	2400	83	---	<1	<1	<1	<1	<1	<25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Bromodichloromethane	0.69	3	0.13	5.5	<1J	<1J	<1	<1	<1	<25	<1	<1	<1	<1	<1	<1	<1	<1J	<1J	<1J	<1J	<1J	<1J	<1J	<1J		
Bromoform	85	370	3.3	43	<1	<1	<1	<1	<1	<25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Bromomethane	15	63	7.5	---	<2	<2	<2	<2	<2	<50	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
Carbon Disulfide	1000	4300	810	---	<2	<2	<2	<2	<2	<50	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
Carbon Tetrachloride	0.34	1.5	5	2.3	<1	<1	<1	<1	<1	<25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Chlorobenzene	310	1300	100	100	0.22 J	<1	<1	<1	<1	<25	<1	<															

Table 11
Building 5 Area Groundwater Analytical Results - December 2016

Parameter	Residential Groundwater Concentration for Vapor Intrusion	Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or May 2016 Tap Water RSL	April 2016 PRWQS ¹	A-1R4 12/8/2016	A-2R2 12/8/2016	D-1R 12/13/2016	D-1R DUP 12/13/2016	E-1R 12/13/2016	G-1R3 12/16/2016	MW-11 12/16/2016	S-28 12/12/2016	S-29R 12/16/2016	S-30 12/16/2016	S-31R2 12/16/2016	S-32 12/12/2016	S-33 12/8/2016	S-34 12/8/2016	S-35D 12/9/2016	S-35S 12/9/2016	S-36 12/9/2016	S-37 12/9/2016	S-38 12/16/2016	S-39D 12/12/2016	S-39S 12/12/2016	UP-1 12/6/2016	UP-2 12/6/2016	
	Polycyclic Aromatic Hydrocarbons Analytical Results (ug/L)																											
1-Methylnaphthalene	---	---	1.1	--	<1.1	0.38 J	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1.1	<1	<1	<1	<1	<1	<1.1	<1.1	<1.1		
2-Methylnaphthalene	---	---	36	--	0.55 J	0.38 J	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1.1	<1	<1	<1	<1	<1	<1.1	<1.1	<1.1		
Acenaphthene	---	---	530	670	<1.1	<1	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1.1	<1	<1	<1	<1	<1	<1.1	<1.1	<1.1		
Acenaphthylene	---	---	--	--	<1.1	<1	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1.1	<1	<1	<1	<1	<1	<1.1	<1.1	<1.1		
Anthracene	---	---	1800	8300	33.1	<1	<1	<1	51	<1	<1.1	<1	14.8	<1.1	3.9	1.1	1.2	<1	<1	<1.1	<1	<1	<1	<1.1	2.8	1.9	<1.1	
Benz(a)anthracene	---	---	0.012	0.038	<0.056	<0.05	<0.05	<0.05	<0.052	<0.055	<0.05	<0.053	<0.055	<0.05	<0.05	<0.05	<0.051	<0.05J	<0.053J	<0.05J	<0.05J	<0.051	<1.1	<0.052	<0.053J	<0.056		
Benz(a)pyrene	---	---	0.2	0.038	<0.056	<0.05	<0.05	<0.05	<0.052	<0.055	<0.05	<0.053	<0.055	<0.05	<0.05	<0.05	<0.051	<0.05	<0.053	<0.05	<0.05	<0.051	<0.056	<0.052	<0.053	<0.056		
Benz(b)fluoranthene	---	---	0.034	0.038	<0.11J	<0.1	<0.1	<0.1	<0.1	<0.11	<0.1	<0.11	<0.11	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.11	<0.11	<0.11		
Benz(g,h,i)perylene	---	---	--	--	210	<1.1	<1	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1.1	<1.1	<1.1		
Benz(k)fluoranthene	---	---	0.34	0.038	<0.11	<0.1	<0.1	<0.1	<0.1	<0.11	<0.1	<0.11	<0.11	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.11	<0.11	<0.11			
Chrysene	---	---	3.4	0.038	<0.11	<0.1	<0.1	<0.1	<0.1	<0.11	<0.1	<0.11	<0.11	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.11	<0.11	<0.11			
Dibenz(a,h)anthracene	---	---	0.0034	0.038	<0.11J	<0.1	<0.1	<0.1	<0.1	<0.11	<0.1	<0.11	<0.11	<0.1	<0.1	<0.1	<0.1	<0.1	<0.11J	<0.1	<0.1	<0.1	<0.11	<0.11	<0.11			
Fluoranthene	---	---	800	130	<1.1	<1	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1	<1.1	<1	<1	<1	<1	<1.1	<1.1	<1.1		
Fluorene	---	---	290	1100	<1.1	<1	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1	<1.1	<1	<1	<1	<1	<1.1	<1.1	<1.1		
Indeno(1,2,3-cd)pyrene	---	---	0.034	0.038	<0.11J	<0.1	<0.1	<0.1	<0.1	<0.11	<0.1	<0.11	<0.11	<0.1	<0.1	<0.1	<0.1	<0.11J	<0.1	<0.1	<0.1	<0.11	<0.11	<0.11				
Naphthalene	3.2	14	0.17	0.17	0.423	0.106	<0.1	<0.1	<0.1	<0.11	<0.1	<0.11	<0.11	<0.1	<0.1	<0.1	<0.11	0.411	<0.1	<0.1	<0.1	<0.1	<0.11	<0.11	<0.11			
Phenanthrene	---	---	--	--	18	<1.1	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1	<1.1	<1	<1	<1	<1	<1.1	<1.1	<1.1		
Pyrene	---	---	--	--	120	830	<1.1	<1	<1	<1	<1	<1.1	<1	<1	<1	<1	<1	<1.1	<1	<1	<1	<1	<1	<1.1	<1.1	<1.1		
Volatile Petroleum Hydrocarbons Analytical Results (ug/L)																												
C5-C8 Aliphatics	---	---	1300	--	578 J	<50J	<50J	45.5 J	14.5 J	85.5 J	9.4 J	<50J	13.9 J	<50J	24.2 J	40.4 J	10.4 J	<50J	<50J	<50J	<50J	<50J	<50J	<50J	18 J	11.8 J	12 J	
C5-C8 Aliphatics (Unadj.)	---	---	1300	--	583 J	32.2 J	11.1 J	50.2 J	23.6 J	161 J	9.9 J	<50J	13.9 J	12.4 J	35.2 J	94.5 J	19.2 J	15.2 J	<50J	<50J	<50J	<50J	<50J	<50J	<50J	18.7 J	11.8 J	15.5 J
C9-C10 Aromatics (Unadj.)	---	---	5.5	--	58.7	14.2 J	16 JB	15.2 JB	13.1 JB	151	11.1 JB	<50	24.7 JB	13.9 JB	59.2 B	530	44 J	<50	<50	<50	<50	<50	<50	<50	10 J	10.1 J	10.1 J	
C9-C12 Aliphatics	---	---	100	--	70	40.1 J	<50	<50	<50	17800	<50	<50	21.7 J	<50	1890	2250	24.5 J	9.5 J	<50	<50	<50	<50	<50	<50	<50	59.7	19.8 J	<50
C9-C12 Aliphatics (Unadj.)	---	---	100	--	641	647	16.2 JB	13.8 JB	85000	9.4 JB	<50	47.4 JB	20.7 JB	7660	95900	128	16.3 J	<50	<50	<50	<50	<50	<50	<50	1400	63.7	16.9 J	
Extractable Petroleum Hydrocarbons Analytical Results (ug/L)																												
C11-C22 Aromatics	---	---	5.5	--	<110J	78.9 J	35.6 J	37.7 J	63.5 J	48.8 J	41 J	<100J	39.5 J	58.7 J	48.9 J	<110J	<110J	<100J	<110J	<100J	<110J	<100J	<100J	41.3 JB	<100J	34.2 J	<100J	
C11-C22 Aromatics (Unadj.)	---	---	5.5	--	<110J	79.6 J	36.6 J	38.7 J	98.2 J	49.8 J	41 J	<100J	51.6 J	59.1 JB	52.6 JB	<110J	<110J	<100J	<110J	<100J	<110J	<100J	<100J	41.3 JB	<100J	36.8 J	<100J	
C19-C36 Aliphatics	---	---	60000	--	<110	<110	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	99.3 J	<100	98.8 J	<100J
C9-C18 Aliphatics	---	---	--	--	<110	18.4 J	<100	<100	<100	<110	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	84.9 J	<100	<100
Semivolatile Organic Compounds Analytical Results (ug/L)																												
1,1'-Biphenyl	23	95	0.83	--	<1.1	<1	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1.1	<1	<1	<1	<1	<1	<1.1	<1.1	<1.1		
1,2,4,5-Tetrachlorobenzene	---	---	1.7	--	<2.2	<2	<2	<2	<2	<2.2	<2	<2.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2.1	<2.1	<2.2	
1,3-Hexachlorobutadiene	0.21	0.93	0.14	4.4	<1.1	<1	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1	<1.1	<1	<1	<1	<1	<1	<1.1	<1.1	<1.1	
2,3,4,6																												

Table 11
Building 5 Area Groundwater Analytical Results - December 2016

Parameter	Residential Groundwater Concentration for Vapor Intrusion	Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or May 2016 Tap Water RSL	PRWQS ¹	April 2016	A-1R4	A-2R2	D-1R	D-1R DUP	E-1R	G-1R3	MW-11	S-28	S-29R	S-30	S-31R2	S-32	S-33	S-34	S-35D	S-35S	S-36	S-37	S-38	S-39D	S-39S	UP-1	UP-2
						12/8/2016	12/8/2016	12/13/2016	12/13/2016	12/13/2016	12/13/2016	12/16/2016	12/12/2016	12/16/2016	12/16/2016	12/12/2016	12/12/2016	12/8/2016	12/9/2016	12/9/2016	12/9/2016	12/9/2016	12/9/2016	12/9/2016	12/12/2016	12/12/2016	12/6/2016	12/6/2016
Organochlorine Pesticide Analytical Results (ug/l)																												
4,4'-DDD	---	---	0.032	---	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
4,4'-DDE	---	---	0.046	---	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
4,4'-DDT	---	---	0.23	0.0022	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Aldrin	0.19	0.85	0.00092	0.00049	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.011	<0.01	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
alpha-Chlordane ⁴	---	---	0.2	---	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Dieldrin	---	---	0.0018	0.00052	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Endosulfan I ⁵	---	---	100	62	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Endosulfan II ⁵	---	---	100	62	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Endosulfan Sulfate ⁶	---	---	100	62	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Endrin	---	---	2	0.059	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Endrin Aldehyde	---	---	---	0.29	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Endrin Ketone	---	---	---	---	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
gamma-Chlordane ⁴	---	---	0.2	---	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Heptachlor	0.11	0.49	0.4	0.00079	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Heptachlor Epoxide	0.7	3.1	0.2	0.00039	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Methoxychlor	---	---	40	40	<0.022	<0.022	<0.02	<0.02	<0.02	<0.02	<0.02	<0.021	<0.02	<0.02	<0.022	<0.02	<0.02	<0.02	<0.022	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
Toxaphene	---	---	3	0.0028	<0.28	<0.27	<0.25	<0.25	<0.25	<0.26	<0.26	<0.25	<0.25	<0.28	<0.28	<0.28	<0.25	<0.25	<0.27	<0.25	<0.27	<0.26	<0.25	<0.25	<0.26	<0.26	<0.26	
α -BHC	---	---	0.0072	---	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.011	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
β -BHC	---	---	0.025	0.091	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.011	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
γ -BHC (Lindane)	---	---	0.2	---	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.011	<0.01	<0.01</										

Table 12
Building 5 Area 2016 Groundwater Analytical Results

Parameter	Building 5 Area COCs								Other Building 5 Area COPCs															
	Benzene	Ethylbenzene	Isopropyl Alcohol	Methanol	Toluene	Acetone	Methyl Isobutyl Ketone (MIBK)	Total Xylenes	1,1-Dichloroethane	1,4-Dioxane	Methyl Tert-Butyl Ether (MTBE)	Naphthalene	C9-C10 Aromatics (Unadj.)	C9-C12 Aliphatics (Unadj.)	C11-C22 Aliphatics (Unadj.)	C11-C22 Aromatics (Unadj.)	C9-C18 Aliphatics	Benzaldehyde	Bis(2-ethylhexyl)phthalate	4,4'-DDT	Dieldrin	Heptachlor Epoxide		
Screening Level	Concentration (ug/L)																							
USEPA	5	700	410	20000	1000	14000	6300	10000	2.8	0.46	14	0.17	5.5	100	100	5.5	5.5	100	19	6	0.23	0.0018	0.2	
PRWQS ¹	5	530	--	--	1000	--	--	10000	--	--	14	0.17	--	--	--	--	--	--	--	12	0.0022	0.00052	0.00039	
Residential GW VI	1.3	2.6	450000	860000000	15000	18000000	420000	290	6.2	2200	370	3.2	--	--	--	--	--	--	--	--	--	--	0.7	
Industrial GW VI	5.6	12	1900000	360000000	63000	77000000	1800000	1200	27	9600	1600	14	--	--	--	--	--	--	--	--	--	--	3.1	
Sample Round	A-1R4																							
Q1-16	4.8	37.7	<100	<200	0.47 J	6.9 J	4 J	206	<1	83.4	197	0.611	NA	NA	NA	NA	NA	17.8	6.7	<0.011	<0.011	<0.011	<0.011	
Q2-16	7.1	164	<100	<200	1.8 J	84.9 J	33.8	604.9	<5	64.4	166	0.519	60.2	135	869	<110	<110	<110	21.3	<2.1	<0.01	<0.01	<0.01	
Q3-16	4.2	1910 J	<100J	<200	23.8 J	<25	15.1	7970	<1	54.6	102	0.663	77.1 B	462	7610	34.9 J	50.9 J	22.3 JB	18.5	<2	<0.01	<0.01	<0.01	
Q4-16	5.6	122	<100	<200	0.62 J	<25	2.1 J	428.5 E	<1	37.3	138	0.423	58.7	70	641	<110J	<110J	<110	7.5	<2.2	<0.011	<0.011	<0.011	
	A-2R2																							
Q1-16	<0.5	1.6	<100	<200	<1	<10	<5	2.3	<1	0.281	38.7	<0.1	NA	NA	NA	NA	NA	<5.1	3.8	<0.01	<0.01	<0.01	<0.01	
Q2-16	<1	1.3	<100	<200	<1	<25	<5	1.5 J	<1	0.289	13.2	<0.1	<50	<50	<50	<100	<100	<100	<5.2	<2.1	<0.01	<0.01	<0.01	
Q3-16	<1	<1J	<100J	<200	<1J	<25	<5	<2	<1	<0.1	<1	<0.1	12 JB	<50	10 JB	50.4 J	51.1 J	19.6 JB	<5.1	<2	<0.01	<0.01	<0.01	
Q4-16	0.26 J	2.1	<100	<200	0.38 J	<25	<5	742	<1	0.516	18.9	0.106	14.2 J	40.1 J	647	78.9 J	79.6 J	18.4 J	<5	<2	<0.011	<0.011	<0.011	
	D-1R																							
Q1-16	<0.5	<1	<100	<200	<1	<10	<5	<1	<1	3200	4.1	<0.1	NA	NA	NA	NA	NA	<5.1	<2	<0.01	<0.01	<0.01	<0.01	
Q2-16	<1	<1	<100	<200	<1	<25	<5	<2	<1	2850	3.3	<0.11	<50	<50	<50	<110	<110	20.8 J	<5.6	<2.2	<0.011	<0.011	<0.011	
Q3-16	<1	<1	<100J	<200	<1	<25	<5	<2	<1	1660	3.5	<0.1	30.9 JB	<50	34.9 JB	32.8 J	32.8 J	24.6 JB	<5.2	<2.1	<0.01	<0.01	<0.01	
Q4-16	<1	<1	<100	<200	<1	<25	<5	<2	<1	2230	2.8	<0.1	16 JB	<50	16.2 JB	35.6 J	36.6 J	<100	<5	<2	<0.01	<0.01	<0.01	
	E-1R																							
Q1-16	0.81	0.77 J	<100	<200	<1	6.4 J	<5	1.9	<1	62.1	7.5	<0.1	NA	NA	NA	NA	NA	3.3 JJ	2.9	0.013 J	<0.01	<0.01	<0.01	
Q2-16	0.28 J	11.7	<100	<200	<1	<25	<5	39.5	<1	52.4	4.5	0.294	<50	<50	55.4	32.4 JB	60.6 JB	22.7 J	2.9 J	<2.2	<0.011	<0.011	<0.011	
Q3-16	0.59 J	<1	<100	<200	<1	<25	<5	<2	<1	46.1	6.4	<0.11	30.2 JB	<50	35.1 JB	33.5 J	63.5 J	<110	<5.4	<2.2	<0.01	<0.01	<0.01	
Q4-16	0.79 J	<1	<100	<200	<1	<25	<5	0.4 J	<1	58.7 J	5.1	<0.1	13.1 JB	<50	17.9 JB	63.5 J	98.2 J	<100	2.1 J	<2	<0.01	<0.01	<0.01	
	G-1R3																							
Q1-16	<50	17600	<100	<200	87.1 J	<1000	<500	67600	<100	0.269	<100	<0.11	NA	NA	NA	NA	NA	<5.6	<2.2	<0.01	<0.01	<0.01	<0.01	
Q2-16	1080	22100	<100	<200	68 J	<2500	<500	69300	1180	0.259	<100	<0.1	112	753	63100	36.4 JB	36.4 JB	25.8 J	<5.2	<2.1	<0.011	<0.011	<0.011	
Q3-16	<200	18300	<100J	<200	88 J	<5000J	<1000	72740	<200	0.425	<200	<0.11	125 B	14100	74600	58.3 J	59.9 J	<110	<5.5	<2.2	<0.011	<0.011	<0.011	
Q4-16	<25	23300	<100	<200	84.8	<630	<130	65980	<25	0.18	<25	<0.1	151	17800	85000	48.8 J	49.8 J	<110	<5.2	<2.1	<0.01	<0.01	<0.01	
	MW-11																							
Q1-16	<0.5	<1	<100	<200	<1	<10	<5	<1	<1	385	1.9	<0.1	NA	NA	NA	NA	NA	<5.2	<2.1	<0.011	<0.011	<0.011	<0.011	
Q2-16	<1	<1	<100	<200	<1	<25	<5	<2	<1	289	1.5	<0.1	<50	<50	<50	<100	<100	<100	<5	<2	<0.01	<0.01	<0.01	
Q3-16	<1	<1	<100J	<200J	<1	<25	<5	<2	<1	245	2.2	<0.11	14.6 JB	<50J	8.6 JB	43.2 JB	43.2 JB	57.7 JB	<5.3	3.4	<0.011	<0.011	<0.011	
Q4-16	<1	<1	<100	<200	<1	<25	<5	<2	<1	339	1.4	<0.11	11.1 JB	<50	9.4 JB	41 JB	41 JB	<110	<5.5	<2.2	<0.01J	<0.01	<0.01	
	S-28																							
Q1-16	<0.5	<1	<100	<200	<1	<10	<5	<1	<1	11.8</														

Table 12
Building 5 Area 2016 Groundwater Analytical Results

Parameter	Building 5 Area COCs										Other Building 5 Area COPCs													
	Benzene	Ethylbenzene	Isopropyl Alcohol	Methanol	Toluene	Acetone	Methyl Isobutyl Ketone (MIBK)	Total Xylenes	1,1-Dichloroethane	1,4-Dioxane	Methyl Tert-Butyl Ether (MTBE)	Naphthalene	C9-C10 Aromatics (Unadj.)	C9-C12 Aliphatics	C9-C12 Aromatics (Unadj.)	C11-C22 Aromatics (Unadj.)	C11-C18 Aliphatics	Benzaldehyde	Bis(2-ethylhexyl)phthalate	4,4'-DDT	Dieldrin	Heptachlor Epoxide		
Screening Level	Concentration (ug/L)																							
USEPA	5	700	410	20000	1000	14000	6300	10000	2.8	0.46	14	0.17	5.5	100	100	5.5	5.5	100	19	6	0.23	0.0018	0.2	
PRWQS ¹	5	530	---	---	1000	---	---	10000	---	---	14	0.17	---	---	---	---	---	---	12	0.0022	0.00052	0.00039		
Residential GW VI	1.3	2.6	450000	86000000	15000	18000000	420000	290	6.2	2200	370	3.2	---	---	---	---	---	---	---	---	---	---	0.7	
Industrial GW VI	5.6	12	1900000	360000000	63000	77000000	1800000	1200	27	9600	1600	14	---	---	---	---	---	---	---	---	---	---	3.1	
	S-30																							
Q1-16	<0.5	<1	<100	<200	<1	<10	<5	<1	<1	2220	<1	<0.1	NA	NA	NA	NA	NA	0.9 J	<2	<0.01	<0.01	<0.01		
Q2-16	0.41 J	<1	<100	<200	<1	<25	<5	<2	<1	1370	3.8	<0.1	<50	<50	<50	<110	<110	<110	<5.2	<2.1	<0.01	<0.01	<0.01	
Q3-16	0.25 J	<1	<100	<200	<1	<25J	<5	<2	<1	1330	4	<0.11	26.7 JB	<50	31.9 JB	43.3 JB	43.3 JB	89.4 JB	<5.3	<2.1	<0.01	<0.01	<0.01	
Q4-16	0.43 J	<1	<100	<200	<1	<25	<5	<2	<1	1190	4	<0.11	13.9 JB	<50	20.7 JB	58.7 JB	59.1 JB	18.8 J	<5.5	<2.2	<0.011J	<0.011	<0.011J	
	S-31R2																							
Q1-16	4.4 J	4420	<100	<200	<10	<100	<50	5590	<10	19.7	5.9 J	<0.1	NA	NA	NA	NA	NA	2 J	<2	<0.01	<0.01	<0.01		
Q2-16	<20	1360	<100	<200	<20	261 J	<100	<40	<20	40.1	8.2 J	<0.11	39.3 J	113	1420	<110	<110	2.3 J	<2.2	<0.011	<0.011	<0.011		
Q3-16	2.1	1630	<100	<200	<1	<25J	<5	0.92 J	<1	23	7.3	<0.1	67.1 B	61.3	1510	32.3 J	32.3 J	172 G	<5.2	<2.1	<0.011	<0.011	<0.011	
Q4-16	2.7	3340	<100	<200	0.91 J	<25	<5	5960	<1	22	4.6	<0.1	59.2 B	1890	7660	48.9 JB	52.6 JB	25.1 J	2 J	<2	<0.011	<0.011	<0.011	
	S-32																							
Q1-16	<50	49900	<100	<200	74.9 J	<1000	<500	86400	<100	3.06	<100	0.321 BJ	NA	NA	NA	NA	NA	<5	<2	<0.051	<0.051	<0.051		
Q2-16	<1000	49600	<100	<200	<1000	<25000	<5000	86210	<1000	3.18	<1000	0.372	463	11200	108000	49.5 J	49.5 J	185 B	<5	<2	<0.052	<0.052	<0.052	
Q3-16	<1000	36800	<100J	<200	<1000	<25000	<5000	60190	<1000	4.23	<1000	0.364	305	4780	92000	47.6 J	47.6 J	41.2 JB	<5.6	2.2	<0.05	<0.05	<0.05	
Q4-16	3.7	32900	<100	<200	50	<25	<5	58500	<1	3.72	0.66 J	0.411	530	2250	95900	<110	<110	<110	<5	<2	<0.01	<0.01	<0.01	
	S-33																							
Q1-16	<0.5	<1	<100	<200	<1	<10	<5	0.45 J	<1	32.5	8.9	<0.11	NA	NA	NA	NA	NA	1.6 J	<2.2	<0.011	<0.011	<0.011		
Q2-16	<1	<1	<100	<200	<1	<25	<5	<2	<1	24.3	5.8	<0.11	50	<50	72.3	32.6 JB	33.2 JB	20.6 J	<5.6	<2.2	<0.011	<0.011	<0.011	
Q3-16	<1	<1	<100	<200	<1	<25J	<5	<2	<1	18.2	5.7	<0.1	64.6 B	28.9 J	94.5 B	<100	<100	29.8 JB	<5	<2	<0.01	<0.01	<0.01	
Q4-16	0.23 J	41.9	<100	<200	<1	<25	<5	26.6	<1	18.8	4.8	<0.1	44 J	24.5 J	128	<110J	<110J	<110	<5	<2	<0.01	<0.01	<0.01	
	S-34																							
Q1-16	<0.5	<1	<100	<200	<1	<10	<5	<1	<1	16.4	4.4	<0.1	NA	NA	NA	NA	NA	<5.1	<2	<0.011	<0.011	<0.011		
Q2-16	<1	<1	<100	<200	<1	<25	<5	<2	<1	16.7	3.6	<0.11	<50	<50	34.2 JB	34.2 JB	22.7 J	<5.5	<2.2	<0.011	<0.011	<0.011		
Q3-16	<1	<1	<100	<200	<1	<25J	<5	<2	<1	12.6	4.3	<0.1	25.7 JB	<50	33 JB	<100	<100	26.5 JB	<5	<2	<0.01	<0.01	<0.01	
Q4-16	<1	<1	<100	<200	<1	<25	<5	<2	<1	13.5	3	<0.1	<50	9.5 J	16.3 J	<100J	<100J	<100	<5.1	<2	<0.011	<0.011	<0.011	
	S-35D																							

Table 12
Building 5 Area 2016 Groundwater Analytical Results

Parameter	Building 5 Area COCs								Other Building 5 Area COPCs														
	Benzene	Ethylbenzene	Isopropyl Alcohol	Methanol	Toluene	Acetone	Methyl Isobutyl Ketone (MIBK)	Total Xylenes	1,1-Dichloroethane	1,4-Dioxane	Methyl Tert-Butyl Ether (MTBE)	Naphthalene	C9-C10 Aromatics (Unadj.)	C9-C12 Aliphatics (Unadj.)	C9-C12 Aliphatics (Unadj.)	C11-C22 Aromatics (Unadj.)	C11-C18 Aliphatics	Benzaldehyde	Bis(2-ethylhexyl)phthalate	4,4'-DDT	Dieldrin	Heptachlor Epoxide	
Screening Level	Concentration (ug/L)																						
USEPA	5	700	410	20000	1000	14000	6300	10000	2.8	0.46	14	0.17	5.5	100	100	5.5	5.5	100	19	6	0.23	0.0018	0.2
PRWQS ¹	5	530	---	---	1000	---	---	10000	---	---	14	0.17	---	---	---	---	---	---	12	0.0022	0.00052	0.00039	
Residential GW VI	1.3	2.6	450000	86000000	15000	18000000	420000	290	6.2	2200	370	3.2	---	---	---	---	---	---	---	---	---	0.7	
Industrial GW VI	5.6	12	1900000	360000000	63000	77000000	1800000	1200	27	9600	1600	14	---	---	---	---	---	---	---	---	---	3.1	
	S-37																						
Q1-16	<0.5	<1	<100	<200	<1	<10	<5	<1	<1	34.7	0.81 J	<0.11	NA	NA	NA	NA	NA	<5.5	<2.2	<0.01	<0.01	<0.01	
Q2-16	<1	<1	<100	<200	<1	<25	<5	<2	<1	25.2	<1	<0.1	<50	<50	<50	<100	<100	22.8 JB	<5	2	<0.01	<0.01	<0.01
Q3-16	<1	<1	<100	<200	<1	<25 J	<5	<2	<1	19.7	0.61 J	<0.1	26.5 JB	<50	26.3 JB	<110	<110	32 JB	<5	<2	NA	NA	NA
Q4-16	<1	<1	<100	<200	<1	<25	<5	<2	<1	19.9	0.72 J	<0.1	<50	<50	<50	<100	<100	<5	<2	<0.01	<0.01	<0.01	
	S-38																						
Q1-16	<0.5	<1	<100	<200	<1	<10	<5	<1	<1	449	1.2	<0.11	NA	NA	NA	NA	NA	<5.6	<2.2	<0.011	<0.011	<0.011	
Q2-16	<1	<1	<100	<200	<1	<25	<5	<2	<1	210	1.1	0.108	<50	<50	<50	<100	<100	<5.2	2.1	<0.011	<0.011	<0.011	
Q3-16	<1	<1	<100 J	<200	<1	<25	<5	<2	<1	2470	3.7	<0.1	21.9 JB	<50	29.7 JB	46 J	46 J	42.3 JB	<5.1	<2	<0.01	<0.01	<0.01
Q4-16	<1	<1	<100	<200	<1	<25	<5	<2	<1	229	0.58 J	<0.1	12 JB	<50	<50	41.3 JB	41.3 JB	<100	<5.1	<2	<0.01 J	<0.01	<0.01 J
	S-39D																						
Q2-16	<1	5.6	<100	<200	<1	<25	<5	14.2	<1	27.2	<1	<0.11	<50	<50	<50	<110	<110	<5.6	<2.2	<0.012	<0.012	<0.012	
Q3-16	<1	<1 J	<100 J	<200	<1 J	<25	<5	<2	<1	81.6	0.37 J	<0.11	12.1 JB	<50	8.2 JB	<110	<110	<5.6	<2.2	<0.012	<0.012	<0.012	
Q4-16	<1	<1	<100	<200	<1	<25	<5	<2	<1	51.6	<1	<0.11	<50	<50	<50	<100	<100	<5.6	<2.2	<0.01 J	<0.01	<0.01	
	S-39S																						
Q2-16	0.3 J	1670	<100	<200	4.8	<25	<5	5835	<1	32.6	0.25 J	<0.12	<50	<50	6780	<110	<110	<110	<6.2	<2.5	<0.01	<0.01	<0.01
Q3-16	<50	2360	<100	<200	<50	<1300	<250	7627	<50	39.6	<50	<0.1	35 JB	1470	7830	<100	<100	<100	3 J	<2.1	<0.012	<0.012	<0.012
Q4-16	<1	218	<100	<200	0.24 J	<25	<5	903.4	<1	51.6 J	0.33 J	<0.1	10 J	59.7	1400	<100	<100	84.9 J	1.8 J	<2.1	<0.01	<0.01	<0.01
	UP-1																						
Q1-16	<0.5	<1	<100	<200	<1	<10	<5	<1	<1	1.47	<1	<0.1	NA	NA	NA	NA	NA	<5	5.6	<0.01	<0.01	<0.01	
Q2-16	<1	<1	<100	<200	<1	<25	<5	<2	<1	1.83	<1	<0.1	43.1 J	<50	62.3	<100	<100	<5.2	<2.1	<0.01	<0.01	<0.01	
Q3-16	<1	0.27 J	<100	<200	<1	<25 J	<5	0.57 J	<1	2.41	<1	<0.11	55.2 B	21.8 J	77.9 B	38.4 J	38.4 J	496	<5.3	<2.1	0.021	0.013	0.0053
Q4-16	<1	<1	<100	<200	<1	<25	<5	<2	<1 J	0.91	<1	<0.11	43.9 J	19.8 J	63.7	34.2 J	36.8 J	<100	<5.3	<2.1	<0.011	<0.011	<0.011
	UP-2																						
Q1-16	<0.5	<1	<100	<200	<1	<10	<5	<1	<1	358	4.4	<0.1	NA	NA	NA	NA	NA	<5	<2	<0.01	<0.01	<0.01	
Q2-16	<1	<1	<100	<200	<1	<25	<5	<2	<1	514	3.2	<0.11	<50	<50	<100	<100	<100	<5.3	<2.1	<0.01	<0.01	<0.01	
Q3-16	<1	<1	<100	<200	<1	<25 J	<5	<2	<1	328	3	<0.11	30.5 JB	<50	33.6 JB	42.6 J	42.6 J	32.5 JB	<5.3	<2.1			

Table 13
Mann-Kendall Results for Ethylbenzene (Building 5 Area)

GSI MANN-KENDALL TOOLKIT for Constituent Trend Analysis						
Evaluation Date: 2-Feb-17			Job ID: Building 5 Area			
Facility Name: BMS Humacao, PR			Constituent: Ethylbenzene			
Conducted By: Haley Royer			Concentration Units: ug/L			
Sampling Point ID:		A-1R(4)	A-2R(2)	G-1R(3)	S-31R(2)	S-32
Sampling Event	Sampling Date	ETHYLBENZENE CONCENTRATION (ug/L)				
1	1-Jun-13	9790	2200	33000	2870	26900
2	1-Sep-13	14000	38.4	32900	3570	47200
3	1-Dec-13	10400	83.3	21600	3740	29800
4	1-Mar-14	5270	23.1	22200	3660	39800
5	1-Jun-14	4110	10.4	34300	2260	44600
6	1-Sep-14	3480	1	28000	2580	38700
7	1-Dec-14	1630	1.8	32300	2990	48300
8	1-Mar-15	431	2.4	24800	2290	49500
9	1-Jun-15	356	3.6	27200	5660	44500
10	1-Sep-15	2820	19.9	28200	3740	44800
11	1-Dec-15	351	1	25300	2470	39800
12	1-Mar-16	37.7	1.6	17600	4420	49900
13	1-Jun-16	164	1.3	22100	1360	49600
14	1-Sep-16	1910	1	18300	1630	36800
15	1-Dec-16	122	2.1	23300	3340	32900
16						
17						
18						
19						
20						
Coefficient of Variation:	1.20	3.54	0.21	0.35	0.18	
Mann-Kendall Statistic (S):	-79	-58	-43	-12	18	
Confidence Factor:	>99.9%	99.9%	98.2%	70.4%	79.6%	
Concentration Trend:	Decreasing	Decreasing	Decreasing	Stable	No Trend	

Notes:

- At least four independent sampling events per well are required for calculating the trend. Methodology is valid for 4 to 40 samples.
- Confidence in Trend = Confidence (in percent) that constituent concentration is increasing ($S>0$) or decreasing ($S<0$): >95% = Increasing or Decreasing; $\geq 90\%$ = Probably Increasing or Probably Decreasing; $< 90\%$ and $S>0$ = No Trend; $< 90\%$, $S\leq 0$, and $COV \geq 1$ = No Trend; $< 90\%$ and $COV < 1$ = Stable.
- Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

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Table 14
Mann-Kendall Results for Xylene (Building 5 Area)

GSI MANN-KENDALL TOOLKIT for Constituent Trend Analysis							
Evaluation Date: 2-Feb-17			Job ID: Building 5 Area				
Facility Name: BMS Humacao, PR			Constituent: Total Xylene				
Conducted By: Haley Royer			Concentration Units: ug/L				
Sampling Point ID:		A-1R(4)	A-2R(2)	G-1R(3)	S-31R(2)	S-32	
Sampling Event	Sampling Date	TOTAL XYLENE CONCENTRATION (ug/L)					
1	1-Jun-13	33900	5790	115000	75.8	68200	
2	1-Sep-13	36800	82.2	110000	1210	120000	
3	1-Dec-13	28500	270	68500	381	67200	
4	1-Mar-14	14700	65.9	80200	761	100000	
5	1-Jun-14	10000	22.5	109000	10	105000	
6	1-Sep-14	9860	1	87000	5.7	81100	
7	1-Dec-14	4230	2.7	91000	330	102000	
8	1-Mar-15	1400	7.8	82300	379	81900	
9	1-Jun-15	1210	7.1	87200	20	81800	
10	1-Sep-15	9490	89.8	85300	10	71900	
11	1-Dec-15	1320	0.49	79400	467	66900	
12	1-Mar-16	206	2.3	67600	5590	86400	
13	1-Jun-16	605	1.5	69300	40	86200	
14	1-Sep-16	7970	1	72700	0.92	60200	
15	1-Dec-16	429	742.0	66000	5960	58500	
16							
17							
18							
19							
20							
Coefficient of Variation:	1.17	3.14	0.19	1.93	0.22		
Mann-Kendall Statistic (S):	-79	-42	-59	-2	-37		
Confidence Factor:	>99.9%	98.0%	99.9%	52.0%	96.3%		
Concentration Trend:	Decreasing	Decreasing	Decreasing	No Trend	Decreasing		

Notes:

- At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
- Confidence in Trend = Confidence (in percent) that constituent concentration is increasing ($S>0$) or decreasing ($S<0$): >95% = Increasing or Decreasing; $\geq 90\%$ = Probably Increasing or Probably Decreasing; < 90% and $S>0$ = No Trend; < 90%, $S\leq 0$, and $COV \geq 1$ = No Trend; < 90% and $COV < 1$ = Stable.
- Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

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Table 15
Mann-Kendall Results for 1,4-Dioxane (Building 5 Area)

GSI MANN-KENDALL TOOLKIT for Constituent Trend Analysis							
Evaluation Date: 23-Mar-17		Job ID: Building 5 Area					
Facility Name: BMS Humacao, PR		Constituent: 1,4-Dioxane					
Conducted By: Terry Taylor		Concentration Units: ug/L					
Sampling Point ID:	A-1R4	D-1R	E-1R	MW-11	S-28	S-29	S-30
Sampling Event	Sampling Date	1,4-DIOXANE CONCENTRATION (ug/L)					
1	1-Mar-16	83.4	3200	62.1	385	11.8	11.6
2	1-Jun-16	64.4	2850	52.4	289	330	11.7
3	1-Sep-16	54.6	1660	46.1	245	278	10.6
4	1-Dec-16	37.3	2230	58.7	339	87	12.5
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
Coefficient of Variation:	0.32	0.27	0.13	0.19	0.86	0.07	0.31
Mann-Kendall Statistic (S):	-6	-4	-2	-2	0	2	-6
Confidence Factor:	95.8%	83.3%	62.5%	62.5%	37.5%	62.5%	95.8%
Concentration Trend:	Decreasing	Stable	Stable	Stable	Stable	No Trend	Decreasing

Sampling Date	A-1R4 (ug/L)	D-1R (ug/L)	MW-11 (ug/L)	S-29 (ug/L)	S-30 (ug/L)
01/16	~80	~2000	~400	~10	~1500
03/16	~70	~2000	~400	~10	~1500
05/16	~65	~2000	~400	~10	~1500
06/16	~60	~2000	~400	~10	~1500
08/16	~55	~1800	~350	~10	~1300
10/16	~50	~1800	~350	~10	~1300
11/16	~45	~2000	~400	~10	~1200

Notes:

- At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
- Confidence in Trend = Confidence (in percent) that constituent concentration is increasing ($S>0$) or decreasing ($S<0$): $>95\% =$ Increasing or Decreasing; $\geq 90\% =$ Probably Increasing or Probably Decreasing; $< 90\% \text{ and } S>0 =$ No Trend; $< 90\%, S\leq 0, \text{ and } COV \geq 1 =$ No Trend; $< 90\% \text{ and } COV < 1 =$ Stable.
- Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

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Table 15
Mann-Kendall Results for 1,4-Dioxane (Building 5 Area)

GSI MANN-KENDALL TOOLKIT for Constituent Trend Analysis											
Evaluation Date: 23-Mar-17		Job ID: Building 5 Area									
Facility Name: BMS Humacao, PR		Constituent: 1,4-Dioxane									
Conducted By: Terry Taylor		Concentration Units: ug/L									
Sampling Point ID: S-31R2 S-32 S-33 S-34 S-35S S-36 S-37											
Sampling Event	Sampling Date	1,4-DIOXANE CONCENTRATION (ug/L)									
1	1-Mar-16	19.7	3.06	32.5	16.4	255	3.73				
2	1-Jun-16	40.1	3.18	24.3	16.7	307	2.86				
3	1-Sep-16	23	4.23	18.2	12.6	372	3.23				
4	1-Dec-16	22	3.72	18.8	13.5	110	0.29				
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
Coefficient of Variation:	0.36	0.15	0.28	0.14	0.43	0.61	0.28				
Mann-Kendall Statistic (S):	0	4	-4	-2	0	-4	-4				
Confidence Factor:	37.5%	83.3%	83.3%	62.5%	37.5%	83.3%	83.3%				
Concentration Trend:	Stable	No Trend	Stable	Stable	Stable	Stable	Stable				

Sampling Date	S-31R2 (ug/L)	S-32 (ug/L)	S-33 (ug/L)	S-34 (ug/L)	S-35S (ug/L)
01/16	~20	~5	~20	~15	~200
03/16	~25	~5	~25	~15	~250
05/16	~50	~5	~25	~15	~300
06/16	~40	~5	~20	~15	~350
08/16	~30	~7	~20	~15	~400
10/16	~25	~7	~20	~15	~350
11/16	~25	~7	~20	~15	~100

Notes:

- At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
- Confidence in Trend = Confidence (in percent) that constituent concentration is increasing ($S>0$) or decreasing ($S<0$): $>95\% =$ Increasing or Decreasing; $\geq 90\% =$ Probably Increasing or Probably Decreasing; $< 90\% \text{ and } S>0 =$ No Trend; $< 90\%, S\leq 0, \text{ and } COV \geq 1 =$ No Trend; $< 90\% \text{ and } COV < 1 =$ Stable.
- Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

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Table 15
Mann-Kendall Results for 1,4-Dioxane (Building 5 Area)

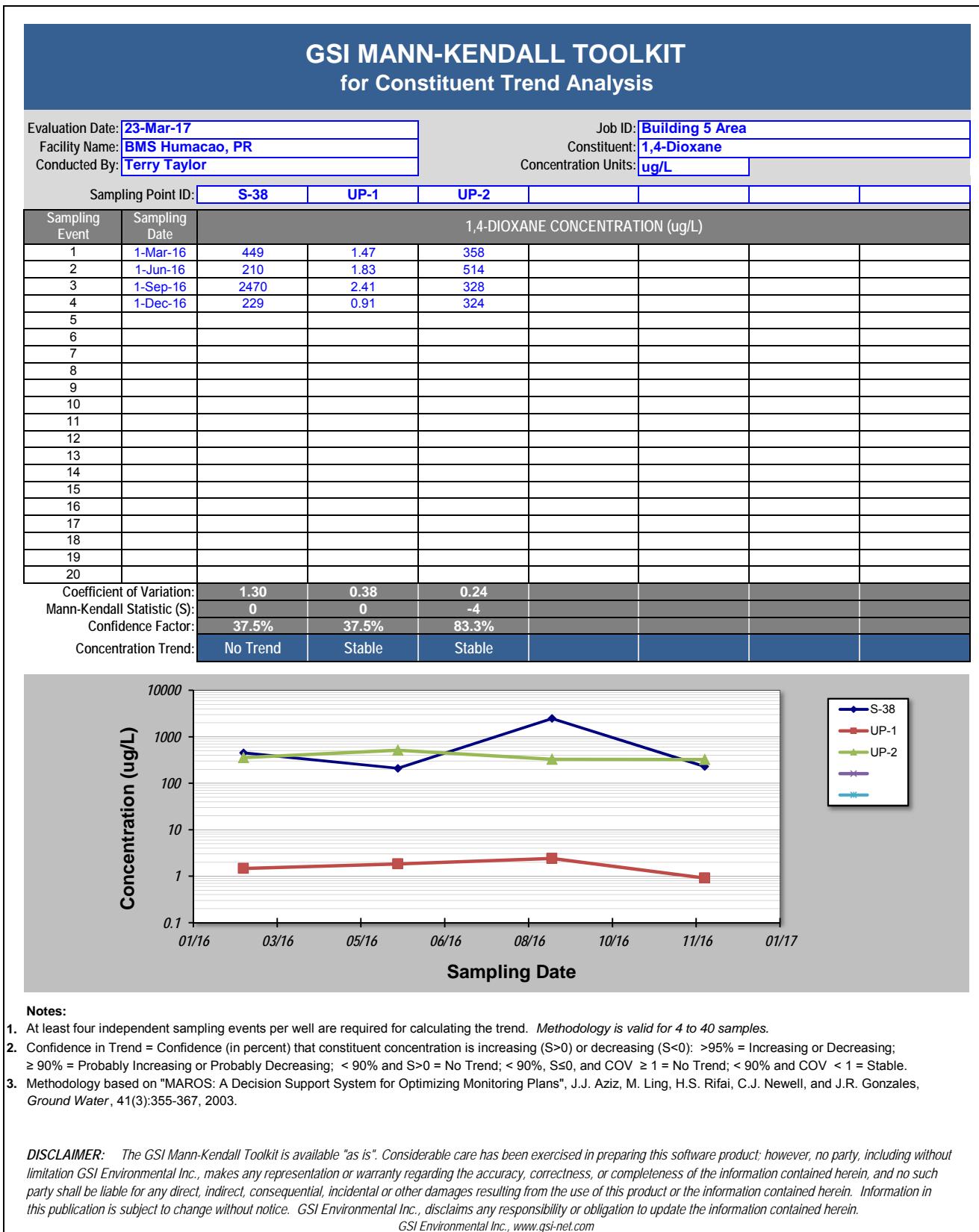


Table 16
Mann-Kendall Results for MTBE (Building 5 Area)

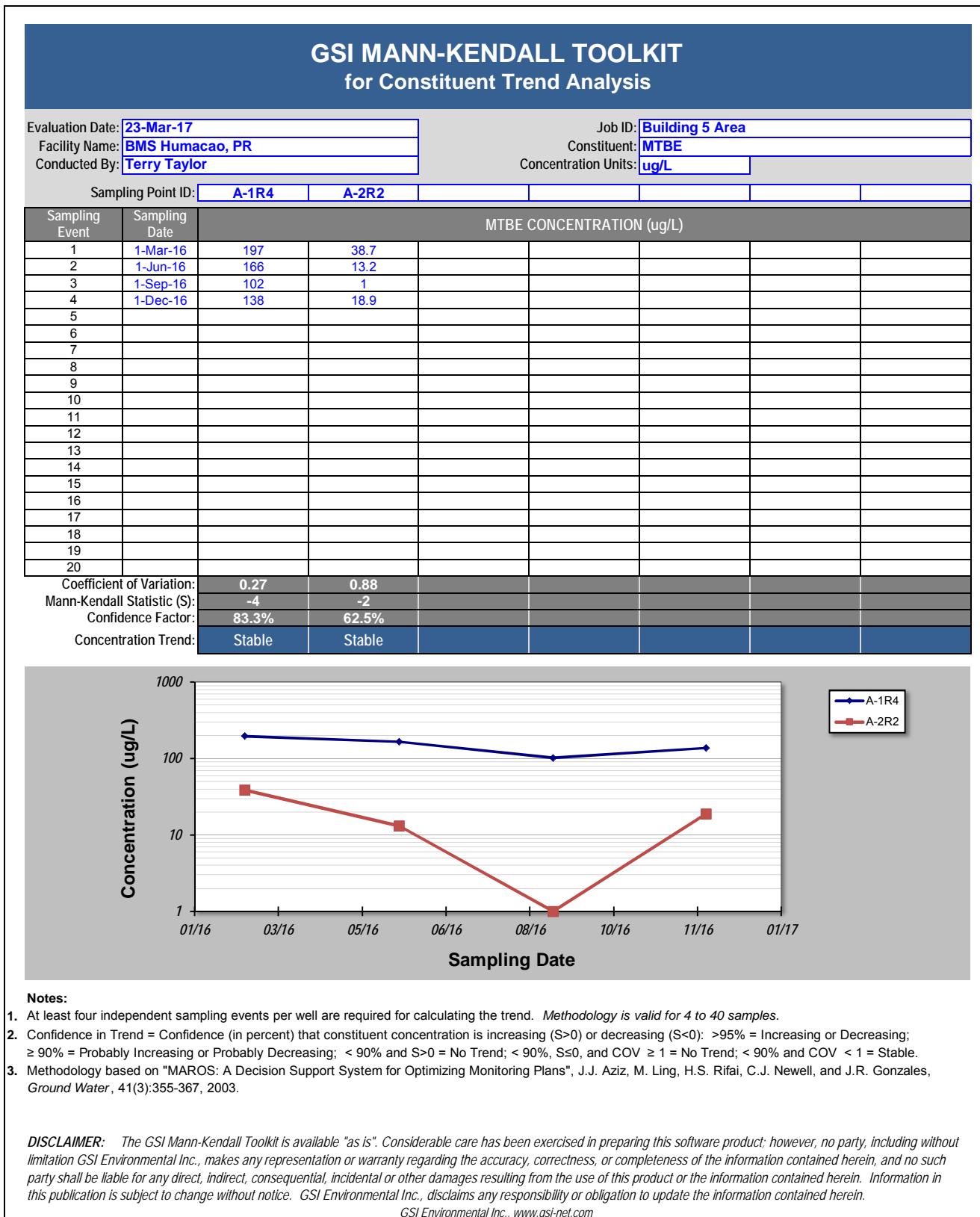


Table 17
Mann-Kendall Results for Naphthalene (Building 5 Area)

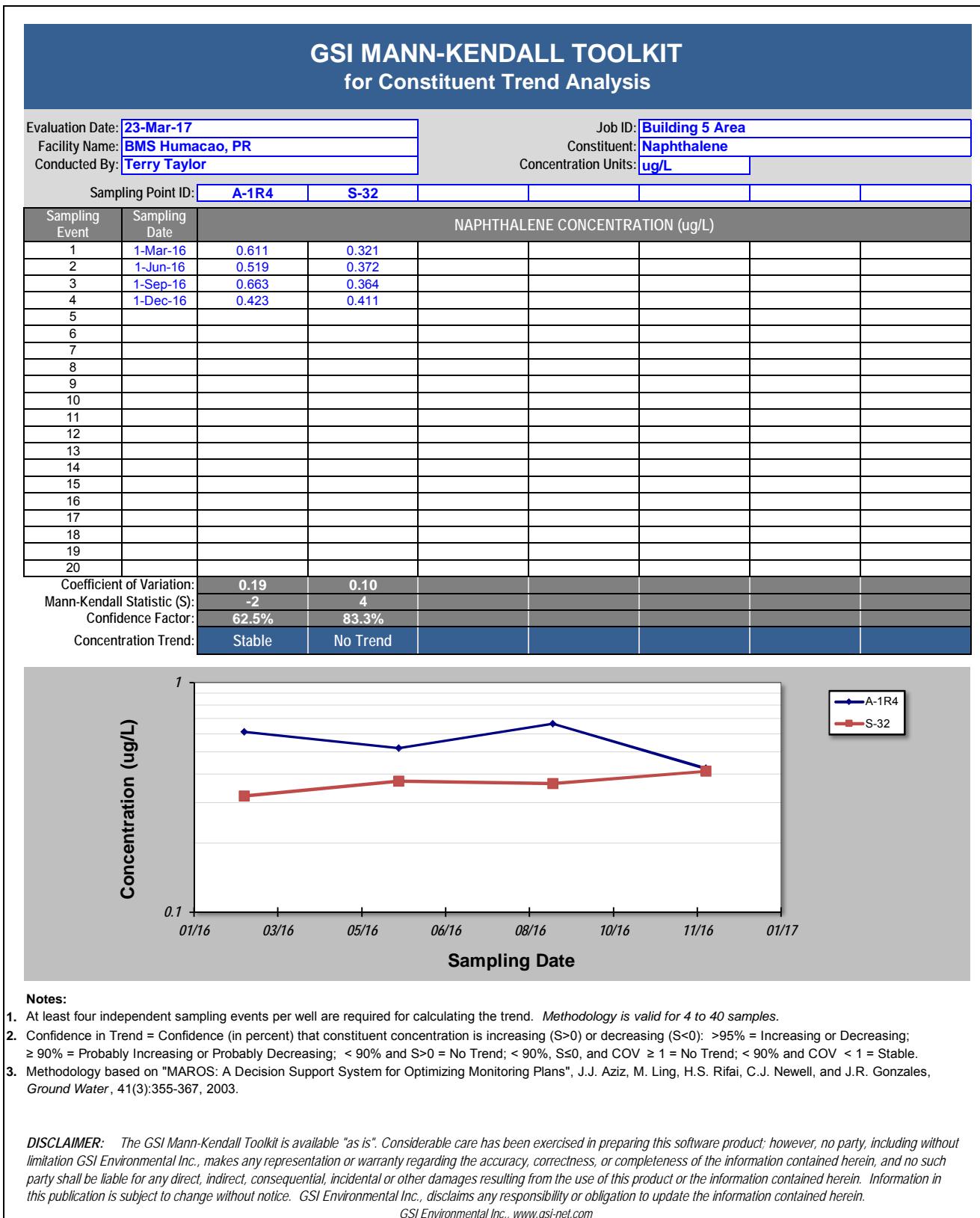


Table 18
Release Assessment Phase 1 Groundwater Analytical Results - December 2016

Parameter	Residential Groundwater Concentration for Vapor Intrusion	Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or May 2016 Tap Water RSL	April 2016 PRWQS ¹	MW-21S 12/14/2016	MW-22S 12/19/2016	MW-23S 12/19/2016	MW-20D 12/22/2016	MW-20S 12/22/2016	RA-10D 12/22/2016	RA-10S 12/22/2016	S-40D 12/7/2016	S-40S 12/7/2016	S-41D 12/7/2016	S-41S 12/7/2016	S-42D 12/15/2016	S-42S 12/15/2016	S-43D 12/15/2016	S-43S 12/15/2016
<i>Volatile Organic Compounds Analytical Results (ug/L)</i>																			
1,1,1-Trichloroethane	6000	25000	200	200	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,1,2,2-Tetrachloroethane	2.4	11	0.076	1.7	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,1,2-Trichloroethane	4	18	5	5	<1	<1	<1	<1J	<1J	<1J	<1J	<1	<1	<1	<1	<1	<1	<1	
1,1-Dichloroethane	6.2	27	2.8	---	0.7 J	<1	<1	<1	<1	<1	<1	<1	<1	<1J	<1	<1	<1	<1	
1,1-Dichloroethylene	160	690	7	7	1.1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1J	<1	<1	<1	
1,2,3-Trichlorobenzene	---	---	7	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
1,2,4-Trichlorobenzene	25	110	70	35	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
1,2,4-Trimethylbenzene	21	89	15	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,2-Dibromo-3-chloropropane	0.02	0.24	0.2	---	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	
1,2-Dibromoethane	0.13	0.58	0.05	0.052	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
1,2-Dichlorobenzene	1900	8100	600	420	1.1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,2-Dichloroethane	1.8	7.8	5	3.8	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1J	<1	<1	<1	<1	
1,2-Dichloroethylene (cis)	---	---	70	70	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,2-Dichloroethylene (trans)	---	---	100	100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1J	<1	<1	<1	<1	
1,2-Dichloropropane	1.9	8.4	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,3-Butadiene	0.027	0.12	0.018	---	<2J	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	
1,3-Dichlorobenzene	---	---	---	320	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,3-Dichloropropene (cis) ²	---	---	0.47	3.4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,3-Dichloropropene (trans) ²	---	---	0.47	3.4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1J	<1	<1	<1	<1	
1,4-Dichlorobenzene	1.9	8.3	75	63	0.4 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,4-Dioxane	2200	9600	0.46	---	0.727 J	<0.11	<0.1	8.6	1.61	1520	1290	3.27	0.222	0.746	1.84	1560	2530	1680	1990
2-Butanone (MEK)	1800000	7500000	5600	---	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	
2-Hexanone	6200	26000	38	---	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
Acetone	18000000	77000000	14000	---	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	
Benzene	1.3	5.6	5	5	<1	<1	<1	0.22 J	<1	0.77 J	<1	<1	<1	<1	<1	<1	0.61 J	0.71 J	
Benzyl Chloride	2.5	11	0.089	---	<2	<2	<2J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
Bromochloromethane	560	2400	83	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Bromodichloromethane	0.69	3	0.13	5.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Bromoform	85	370	3.3	43	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Bromomethane	15	63	7.5	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
Carbon Disulfide	1000	4300	810	---	<2	<2	<2	0.39 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
Carbon Tetrachloride	0.34	1.5	5	2.3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1J	<1	<1	<1	<1	
Chlorobenzene	310	1300	100	100	<1	<1	<1	<1	<1	0.29 J	<1	<1	<1	<1	0.27 J	0.28 J	5	9.5	
Chlorodibromomethane	---	---	0.87	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Chloroethane	20000	82000	21000	---	<2	<2J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2J	<2J	<2	
Chloroform	0.66	2.9	8	57	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Chloromethane	230	960	190	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
Cyclohexane	820	3500	13000	---	<1	<1	<1	0.34 J	<1	<1	<1	<1	<1	<1	0.48 J	0.47 J	3	4.9	
Dichlorodifluoromethane	6	25	200	---	0.99 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
Ethylbenzene	2.6	12	700	530	0.7 J	<1	<1	<1	<1	<1J	<1	<1							

Table 18
Release Assessment Phase 1 Groundwater Analytical Results - December 2016

Parameter	Residential Groundwater Concentration for Vapor Intrusion	Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or May 2016 Tap Water RSL	April 2016 PRWQS ¹	MW-21S 12/14/2016	MW-22S 12/14/2016	MW-23S 12/19/2016	MW-20D 12/22/2016	MW-20S 12/22/2016	RA-10D 12/22/2016	RA-10S 12/22/2016	S-40D 12/7/2016	S-40S 12/7/2016	S-41D 12/7/2016	S-41S 12/7/2016	S-42D 12/15/2016	S-42S 12/15/2016	S-43D 12/15/2016	S-43S 12/15/2016	
Trichloroethylene	0.94	5.9	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
Trichlorofluoromethane	---	---	5200	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2		
Vinyl Chloride	0.13	2.1	2	0.25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
1-Propanol	---	---	---	---	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100		
2-Butanol	58000000	---	24000	---	<100	<100	<100	<100	<100	<100	<100	<100J	<100J	<100	<100	<100	<100	<100		
Low Molecular Weight Alcohols Analytical Results (ug/L)																				
Ethanol	---	---	---	10000	<200	<100	<100	<100	<100	<100	<100	<200J	<200J	<200	<200J	<100	<100	<100		
Isobutyl Alcohol	---	---	5900	---	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100		
n-Butanol	---	---	2000	---	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100		
Polycyclic Aromatic Hydrocarbons Analytical Results (ug/L)																				
1-Methylnaphthalene	---	---	1.1	---	<1	<1.1	<1	<1	<1	<1.1	<1.1	<1	<1	<1	<1.1	<1.1	<1	<1.1		
2-Methylnaphthalene	---	---	36	---	<1	<1.1	<1	<1	<1	<1.1	<1.1	<1	<1	<1	<1.1	<1.1	<1	<1.1		
Acenaphthene	---	---	530	670	<1	<1.1	<1	<1	<1	<1.1	<1.1	<1	<1	<1	<1.1	<1.1	<1	<1.1		
Acenaphthylene	---	---	---	---	<1	<1.1	<1	<1	<1	<1.1	<1.1	<1	<1	<1	<1.1	<1.1	<1	<1.1		
Anthracene	---	---	1800	8300	<1	<1.1	<1	<1	<1	<1.1	<1.1	<1	<1	<1	<1.1	<1.1	1.1	1.3		
Benz(a)anthracene	---	---	0.012	0.038	<0.052	<0.055	<0.051	<0.051	<0.051	<0.054	<0.056	<0.05	<0.051	<0.052	<0.051	<0.054	<0.053	<0.05		
Benz(a)pyrene	---	---	0.2	0.038	<0.052	<0.055	<0.051	<0.051	<0.051	<0.054	<0.056	<0.05	<0.051	<0.052	<0.051	<0.054	<0.053	<0.05		
Benz(b)fluoranthene	---	---	0.034	0.038	<0.1	<0.11	<0.1	<0.1	<0.1	<0.11	<0.11	<0.1	<0.1	<0.1	<0.1	<0.11	<0.1	<0.11		
Benz(g,h,i)perylene	---	---	---	210	<1	<1.1	<1	<1	<1	<1.1	<1.1	<1	<1	<1	<1.1	<1.1	<1	<1.1		
Benz(k)fluoranthene	---	---	0.34	0.038	<0.1	<0.11	<0.1	<0.1	<0.1	<0.11	<0.11	<0.1	<0.1	<0.1	<0.11	<0.11	<0.1	<0.11		
Chrysene	---	---	3.4	0.038	<0.1	<0.11	<0.1	<0.1	<0.1	<0.11	<0.11	<0.1	<0.1	<0.1	<0.11	<0.11	<0.1	<0.11		
Dibenz(a,h)anthracene	---	---	0.0034	0.038	<0.1	<0.11	<0.1	<0.1	<0.1	<0.11	<0.11	<0.1	<0.1	<0.1	<0.11	<0.11	<0.1	<0.11		
Fluoranthene	---	---	800	130	<1	<1.1	<1	<1	<1	<1.1	<1.1	<1	<1	<1	<1.1	<1.1	<1	<1.1		
Fluorene	---	---	290	1100	<1	<1.1	<1	<1	<1	<1.1	<1.1	<1	<1	<1	<1.1	<1.1	<1	<1.1		
Indeno(1,2,3-cd)pyrene	---	---	0.034	0.038	<0.1	<0.11	<0.1	<0.1	<0.1	<0.11	<0.11	<0.1	<0.1	<0.1	<0.11	<0.11	<0.1	<0.11		
Naphthalene	3.2	14	0.17	0.17	<0.1	<0.11	<0.1	<0.1	<0.1	<0.1	0.236	<0.11	<0.1	<0.1	<0.1	<0.11	<0.1	<0.11		
Phenanthrene	---	---	---	18	<1	<1.1	<1	<1	<1	<1.1	<1.1	<1	<1	<1	<1.1	<1.1	<1	<1.1		
Pyrene	---	---	120	830	<1	<1.1	<1	<1	<1	<1.1	<1.1	<1	<1	<1	<1.1	<1.1	<1	<1.1		
Volatile Petroleum Hydrocarbons Analytical Results (ug/L)																				
C5-C8 Aliphatics	---	---	1300	---	<50J	<50J	<50	19.4 J	<50	13.4 J	<50	<50J	<50J	<50J	<50J	20.4 J	15.3 J	29.3 J	31.4 J	
C5-C8 Aliphatics (Unadj.)	---	---	1300	---	<50J	<50J	<50	28.5 J	<50	19.7 J	<50	<50J	<50J	<50J	<50J	20.7 J	15.8 J	41 J	42.9 J	
C9-C10 Aromatics (Unadj.)	---	---	5.5	---	14.8 JB	14.2 JB	13.7 JB	13.1 JB	13.6 JB	57.5 B	14.4 JB	<50	<50	<50	<50	10.7 JB	13.9 JB	27.6 JB	29.7 JB	
C9-C12 Aliphatics	---	---	100	---	<50	<50	<50J	<50J	<50J	37.8 J	<50J	<50	<50	<50	<50	<50	21.7 J	27.3 J		
C9-C12 Aliphatics (Unadj.)	---	---	100	---	12.8 JB	10 JB	10.5 JB	11.4 JB	9.7 JB	96.4 B	19.9 JB	<50	<50	<50	<50	9.1 JB	14.4 JB	50.1 B	59.5 B	
Extractable Petroleum Hydrocarbons Analytical Results (ug/L)																				
C11-C22 Aromatics	---	---	5.5	---	40.4 J	48 J	45.4 JB	32.9 J	<110	48.6 J	<110	<100J	<100J	<100J	<100J	31.5 J	47.6 JB	57.3 J	53.5 JB	77.7 J
C11-C22 Aromatics (Unadj.)	---	---	5.5	---	41.1 J	48.7 J	45.4 JB	32.9 J	<110	48.6 J	<110	<100J	<100J	<100J	<100J	31.5 J	47.6 JB	57.3 J	53.5 JB	80.6 J
C19-C36 Aliphatics	---	---	60000	---	<110	<110	37 J	<100												

Table 18
Release Assessment Phase 1 Groundwater Analytical Results - December 2016

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<i>Semivolatile Organic Compounds Analytical Results (ug/L)</i>																			
1,1'-Biphenyl	23	95	0.83	---	<1	<1.1	<1	<1	<1	<1.1	<1.1	<1	<1	<1	<1	<1.1	<1	<1.1	
1,2,4,5-Tetrachlorobenzene	---	---	1.7	---	<2.1	<2.2	<2	<2	<2	<2.2	<2.2	<2	<2.1	<2	<2.2	<2.1	<2	<2.1	
1,3-Hexachlorobutadiene	0.21	0.93	0.14	4.4	<1	<1.1J	<1J	<1	<1	<1.1J	<1.1	<1	<1	<1	<1.1J	<1.1J	<1J	<1.1J	
2,3,4,6-Tetrachlorophenol	---	---	240	---	<5.2	<5.5J	<5.1	<5.1	<5.1	<5.4J	<5.6	<5J	<5.1J	<5.2J	<5.1J	<5.4J	<5.3J	<5J	
2,4,5-Trichlorophenol	---	---	1200	---	<5.2	<5.5	<5.1	<5.1	<5.1	<5.4	<5.6	<5	<5.1	<5.2	<5.1	<5.4	<5.3	<5	
2,4,6-Trichlorophenol	---	---	4.1	14	<5.2	<5.5	<5.1	<5.1	<5.1	<5.4	<5.6	<5	<5.1	<5.2	<5.1	<5.4	<5.3	<5	
2,4-Dichlorophenol	---	---	46	77	<2.1	<2.2	<2	<2	<2	<2.2	<2.2	<2	<2.1	<2	<2.2	<2.1	<2	<2.1	
2,4-Dimethylphenol	---	---	360	380	<5.2	<5.5	<5.1	<5.1	<5.1	<5.4	<5.6	<5	<5.1	<5.2	<5.1	<5.4	<5.3	<5	
2,4-Dinitrophenol	---	---	39	69	<10	<11	<10	<10	<10	<11	<11	<10	<10	<10	<10	<11	<10	<11	
2,4-Dinitrotoluene	---	---	0.24	1.1	<1	<1.1	<1	<1	<1	<1.1	<1.1	<1	<1	<1	<1.1	<1	<1.1		
2,6-Dinitrotoluene	---	---	0.049	---	<1	<1.1	<1	<1	<1	<1.1	<1.1	<1	<1	<1	<1.1	<1.1	<1	<1.1	
2-Chloronaphthalene	---	---	750	1000	<2.1	<2.2	<2	<2	<2	<2.2	<2.2	<2	<2.1	<2	<2.2	<2.1	<2	<2.1	
2-Chlorophenol	---	---	91	81	<5.2	<5.5	<5.1	<5.1	<5.1	<5.4	<5.6	<5	<5.1	<5.2	<5.1	<5.4	<5.3	<5	
2-Methylphenol	---	---	930	---	<2.1	<2.2	<2	<2	<2	<2.2	<2.2	<2	<2.1	<2	<2.2	<2.1	<2	<2.1	
2-Nitroaniline	---	---	190	---	<5.2	<5.5	<5.1	<5.1J	<5.1J	<5.4	<5.6J	<5	<5.1	<5.2	<5.1	<5.4	<5.3	<5	
2-Nitrophenol	---	---	---	---	<5.2	<5.5	<5.1	<5.1	<5.1	<5.4	<5.6	<5	<5.1	<5.2	<5.1	<5.4	<5.3	<5	
3&4-Methylphenol ³	---	---	930	---	<2.1	<2.2	<2	<2	<2	<2.2	<2.2	<2	<2.1	<2	<2.2	<2.1	<2	<2.1	
3,3'-Dichlorobenzidine	---	---	0.13	0.21	<2.1	<2.2	<2	<2	<2	<2.2	<2.2	<2	<2.1	<2	<2.2	<2.1	<2	<2.1	
3-Nitroaniline	---	---	---	---	<5.2	<5.5	<5.1	<5.1	<5.1	<5.4	<5.6	<5	<5.1	<5.2	<5.1	<5.4	<5.3	<5	
4,6-Dinitro-2-methylphenol	---	---	1.5	13	<5.2	<5.5	<5.1	<5.1	<5.1	<5.4	<5.6	<5	<5.1	<5.2	<5.1	<5.4	<5.3	<5	
4-Bromophenyl Phenyl Ether	---	---	---	---	<2.1	<2.2	<2	<2	<2	<2.2	<2.2	<2	<2.1	<2	<2.2	<2.1	<2	<2.1	
4-Chloro-3-Methylphenol	---	---	1400	---	<5.2	<5.5	<5.1	<5.1	<5.1	<5.4	<5.6	<5	<5.1	<5.2	<5.1	<5.4	<5.3	<5	
4-Chloroaniline	---	---	0.37	---	<5.2	<5.5	<5.1	<5.1	<5.1	<5.4	<5.6	<5	<5.1	<5.2	<5.1	<5.4	<5.3	<5	
4-Chlorophenyl Phenyl Ether	---	---	---	---	<2.1	<2.2	<2	<2	<2	<2.2	<2.2	<2	<2.1	<2	<2.2	<2.1	<2	<2.1	
4-Nitroaniline	---	---	3.8	---	<5.2	<5.5	<5.1	<5.1	<5.1	<5.4	<5.6	<5	<5.1	<5.2	<5.1	<5.4	<5.3	<5	
4-Nitrophenol	---	---	---	---	<10	<11	<10	<10	<10	<11	<11J	<10	<10	<10	<10	<11	<11	<10	
Acetophenone	---	---	1900	---	<2.1	<2.2	<2	<2	<2	<2.2	<2.2	<2	<2.1	<2	<2.2	<2.1	<2	<2.1	
Atrazine	---	---	3	---	<2.1	<2.2	<2	<2	<2	<2.2	<2	<2	<2.1	<2	<2.2	<2.1	<2	<2.1	
Benzaldehyde	---	---	19	---	<5.2	<5.5	<5.1	<5.1	<5.1	<5.4	<5.6	<5	<5.1	<5.2	<5.1	<5.4	<5.3	<5	
Bis(2-chloro-1-methylethyl)ether	---	---	710	1400	<2.1	<2.2	<2	<2	<2	<2.2	<2.2	<2	<2.1	<2	<2.2	<2.1	<2	<2.1	
Bis(2-chloroethoxy)methane	---	---	59	---	<2.1	<2.2	<2	<2	<2	<2.2	<2.2	<2	<2.1	<2	<2.2	<2.1	<2	<2.1	
Bis(2-chloroethyl)ether	8.4	37	0.014	0.3	<2.1	<2.2	<2	<2	<2	<2.2J	<2.2	<2	<2.1	<2	<2.2	<2.1	<2	<2.1	
Bis(2-ethylhexyl)phthalate	---	---	6	12	<2.1	29.8 BJ	<2	<2	<2	<2.2	<2.2	<2	<2.1	<2	6.6	<2.1	<2	<2.1	
Butyl benzyl phthalate	---	---	16	1500	<2.1	<2.2	<2	<2	<2	<2.2	<2.2	<2	<2.1	<2	<2.2	<2.1	<2	<2.1	
Caprolactam	---	---	9900	---	<2.1	<2.2	<2	<2	<2	<2.2	<2.2	<2	<2.1	<2	<2.2	<2.1	<2	<2.1	
Carbazole	---	---	---	---	<1	<1.1	<1	<1	<1	<1.1	<1.1	<1	<1	<1	<1.1	<1	<1.1		
Dibenzofuran	---	---	7.9	---	<5.2	<5.5	<5.1	<5.1	<5.1	<5.4	<5.6	<5	<5.1	<5.2	<5.1	<5.4	<5.3	<5	
Diethyl Phthalate	---	---	15000	17000	<2.1	<2.2	<2	<2	<2	<2.2	<2.2	<2	<2.1	<2	<2.2	<2.1	<2		

Table 18
Release Assessment Phase 1 Groundwater Analytical Results - December 2016

Parameter	Residential Groundwater Concentration for Vapor Intrusion	Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or May 2016 Tap Water RSL	April 2016 PRWQS ¹	MW-21S 12/14/2016	MW-22S 12/19/2016	MW-23S 12/22/2016	MW-20D 12/22/2016	MW-20S 12/22/2016	RA-10D 12/22/2016	RA-10S 12/22/2016	S-40D 12/7/2016	S-40S 12/7/2016	S-41D 12/7/2016	S-41S 12/7/2016	S-42D 12/15/2016	S-42S 12/15/2016	S-43D 12/15/2016	S-43S 12/15/2016
Organochlorine Pesticides Analytical Results (ug/L)																			
4,4'-DDD	---	---	0.032	---	<0.01	<0.011	<0.01	<0.011	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
4,4'-DDE	9.9	---	0.046	---	<0.01	<0.011	<0.01	<0.011	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
4,4'-DDT	---	---	0.23	0.0022	<0.01	<0.011	<0.01J	<0.011	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Aldrin	0.19	0.85	0.00092	0.00049	<0.01	<0.011	<0.01	<0.011	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
alpha-Chlordane ⁴	---	---	0.2	---	<0.01	<0.011	<0.01	<0.011	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Dieldrin	---	---	0.0018	0.00052	<0.01	<0.011	<0.01	<0.011	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Endosulfan I ⁵	---	---	100	62	<0.01	<0.011	<0.01J	<0.011	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Endosulfan II ⁵	---	---	100	62	<0.01	<0.011	<0.01	<0.011	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Endosulfan Sulfate ⁶	---	---	100	62	<0.01	<0.011	<0.01J	<0.011	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Endrin	---	---	2	0.059	<0.01	<0.011	<0.01J	<0.011	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Endrin Aldehyde	---	---	---	0.29	<0.01	<0.011	<0.01	<0.011	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Endrin Ketone	---	---	---	---	<0.01	<0.011	<0.01J	<0.011	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
gamma-Chlordane ⁴	---	---	0.2	---	<0.01	<0.011	<0.01	<0.011	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Heptachlor	0.11	0.49	0.4	0.00079	<0.01	<0.011	<0.01J	<0.011	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Heptachlor Epoxide	0.7	3.1	0.2	0.00039	<0.01	<0.011	<0.01J	<0.011	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Methoxychlor	---	---	40	40	<0.02	<0.022	<0.021	<0.022	<0.02	<0.022	<0.022	<0.02	<0.02	<0.02	<0.02	<0.021	<0.02	<0.02	
Toxaphene	---	---	3	0.0028	<0.25	<0.28	<0.26	<0.28	<0.25	<0.28	<0.28	<0.25	<0.25	<0.25	<0.26	<0.26	<0.25	<0.25	
α -BHC	---	---	0.0072	---	<0.01	<0.011	<0.01	<0.011	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
β -BHC	---	---	0.025	0.091	<0.01	<0.011	<0.01	<0.011	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
γ -BHC (Lindane)	---	---	0.2	---	<0.01	<0.011	<0.01	<0.011	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
δ -BHC	---	---	---	---	<0.01	<0.011	<0.01	<0.011	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Monitored Natural Attenuation Parameters Analytical Results (ug/L)																			
Iron	---	---	14000	---	383	165	180	NA	8760	NA	458	NA	3170	NA	6910	NA	5760	NA	8470
Manganese	---	---	430	---	771	2400	296	NA	315	NA	2260	NA	2960	NA	691	NA	588	NA	359
Alkalinity, Total	---	---	---	---	182000	186000	212000	NA	148000	NA	222000	NA	624000	NA	379000	NA	312000	NA	99200
Iron, Ferric	---	---	---	---	<300J	<300J	<300J	NA	8600J	NA	410J	NA	3100J	NA	6800J	NA	5600J	NA	7500J
Iron, Ferrous	---	---	---	---	<200J	<200J	<200J	NA	<200J	NA	<200J	NA	<200J	NA	<200J	NA	210J	NA	1000J
Methane	---	---	---	---	26.9	6.1	0.15	NA	26.3	NA	13.9	NA	26.7	NA	375	NA	976	NA	4630
Nitrogen, Nitrate	---	---	10000	---	160J	<110	<110J	NA	<110J	NA	<110J	NA	<110	NA	<110	NA	130	NA	140
Nitrogen, Nitrate + Nitrite	---	---	---	---	160	<100	<100	NA	<100	NA	<100	NA	<100	NA	<100	NA	130	NA	140J
Nitrogen, Nitrite	---	---	1000	---	<10J	<10J	<10J	NA	<10J	NA	<10J	NA	<10	NA	<10	NA	<10J	NA	<10J
Sulfate	---	---	---	---	19200	<10000	22400	NA	18000	NA	<10000	NA	47600	NA	71100	NA	<10000	NA	<10000
Sulfide	---	---	---	---	<2000	<2000	<2000	NA	<2000	NA	<2000	NA	<2000	NA	<2000	NA	<2000	NA	<2000

Notes:

¹ April 2016 Puerto Rico Water Quality Standards Regulation for Class SG groundwater

² RSL

Table 19
Phase 1 Program 2016 Groundwater Analytical Results

Parameter	1,4-Dioxane	Methyl Tert-Butyl Ether (MTBE)	tert-Amyl Alcohol	Naphthalene	C9-C10 Aromatics (Unadj.)	C9-C12 Aliphatics (Unadj.)	C11-C22 Aromatics	C11-C22 Aromatics (Unadj.)	Bis(2-ethylhexyl)phthalate
Screening Level									
Concentration (ug/L)									
USEPA	0.46	14	6.3	0.17	5.5	100	5.5	5.5	6
PRWQS ¹	---	14	---	0.17	---	---	---	---	12
Residential GW VI	2200	370	4100	3.2	---	---	---	---	---
Industrial GW VI	9600	1600	17000	14	---	---	---	---	---
Sample Round									
MW-21S									
Q2-16	0.646	<1	<20	<0.11	<50	<50	32.8 JB	33.3 JB	<2.2
Q3-16	0.756	<1	<20	<0.1	16.9 JB	10.1 JB	122 JB	122 JB	<2
Q4-16	0.727 J	<1	<20	<0.1	14.8 JB	12.8 JB	40.4 J	41.1 J	<2.1
MW-22S									
Q2-16	<0.11	<1	<20	<0.11	<50	<50	39.1 JB	39.1 JB	<2.1
Q3-16	0.123	<1	<20	<0.11	16.6 JB	8.3 JB	37.5 JB	37.5 JB	<2.1
Q4-16	<0.11	<1	<20	<0.11	14.2 JB	10 JB	48 J	48.7 J	29.8 BJ
MW-23S									
Q2-16	<0.12	<1	<20	<0.12	<50	<50	33.8 JB	34.3 JB	<2.4
Q3-16	0.342	<1	<20	<0.11	14.3 JB	8.8 JB	37.7 JB	37.7 JB	<2.1
Q4-16	<0.1	<1	<20	<0.1	13.7 JB	10.5 JB	45.4 JB	45.4 JB	<2
MW-20D									
Q2-16	19.6	24.7	<20	<0.11	<50	<50	<110	<110	<2.2
Q3-16	10.2	13.4	<20	<0.1	29.3 JB	30.1 JB	72.6 JB	72.6 JB	<2J
Q4-16	8.6	13.2	<20	<0.1	13.1 JB	11.4 JB	32.9 J	32.9 J	<2
MW-20S									
Q2-16	3.21	4.1	<20	<0.11	<50	<50	<100	<100	<2.1J
Q3-16	2.13	3.9	<20	<0.1	25.8 JB	30.6 JB	35.3 JB	35.3 JB	<2J
Q4-16	1.61	2.9	<20	<0.1	13.6 JB	9.7 JB	<110	<110	<2
RA-10D									
Q2-16	2700	6	<20	<0.1	61.2	108	57.4 J	57.9 J	<2
Q3-16	3090	5.3	<20	<0.1	51 B	75.7 B	42 J	42.7 J	<2
Q4-16	1520	7.2	<20	0.236	57.5 B	96.4 B	48.6 J	48.6 J	<2.2
RA-10S									
Q2-16	1530	5	<20	0.846	<50	<50	<100	<100	<2
Q3-16	1430	3.8	<20	<0.1	28.7 JB	70.8 B	<110	<110	<2
Q4-16	1290	4.3	<20	<0.11	14.4 JB	19.9 JB	<110	<110	<2.2
S-40D									
Q2-16	5.32	<1	<20	<0.11	<50	<50	<110	<110	<2.2
Q3-16	4.82	<1	<20	<0.1	23.9 JB	23.2 JB	<100	<100	<2
Q4-16	3.27	<1	<20	<0.1	<50	<50	<100J	<100J	<2
S-40S									
Q2-16	1.22	<1	<20	<0.11	<50	<50	<110	<110	<2.2
Q3-16	12.6	0.24 J	<20	<0.1	26.9 JB	25.5 JB	34.6 JB	34.6 JB	<2
Q4-16	0.222	<1	<20	<0.1	<50	<50	<100J	<100J	<2

Table 19
Phase 1 Program 2016 Groundwater Analytical Results

Parameter	1,4-Dioxane	Methyl Tert-Butyl Ether (MTBE)	tert-Amyl Alcohol	Naphthalene	C9-C10 Aromatics (Unadj.)	C9-C12 Aliphatics (Unadj.)	C11-C22 Aromatics	C11-C22 Aromatics (Unadj.)	Bis(2-ethylhexyl)phthalate
Screening Level	Concentration (ug/L)								
USEPA	0.46	14	6.3	0.17	5.5	100	5.5	5.5	6
PRWQS ¹	---	14	---	0.17	---	---	---	---	12
Residential GW VI	2200	370	4100	3.2	---	---	---	---	---
Industrial GW VI	9600	1600	17000	14	---	---	---	---	---
S-41D									
Q2-16	1.79 B	<1	<20	<0.11	<50	<50	<110	<110	<2.2
Q3-16	1.71	<1	<20	<0.1	15 JB	9.3 JB	44.5 J	44.5 J	<2
Q4-16	0.746	<1	<20	<0.1	<50	<50	<100J	<100J	<2.1
S-41S									
Q2-16	1.56	<1	<20	<0.1	<50	<50	<100	<100	<2
Q3-16	0.921	<1	<20	<0.11	13.9 JB	9.8 JB	36.4 J	36.4 J	<2.2
Q4-16	1.84	<1	<20	<0.1	<50	<50	31.5 J	31.5 J	<2
S-42D									
Q2-16	6800 B	1.4	<20	<0.1	<50	<50	<110	<110	<2.1
Q3-16	3130	1.1	<20	<0.1	21.5 JB	30.3 JB	40.7 J	40.7 J	<2J
Q4-16	1560	0.78 J	<20	<0.11	10.7 JB	9.1 JB	47.6 JB	47.6 JB	6.6
S-42S									
Q2-16	3890	1.6	<20	<0.1	<50	<50	<100	<100	<2
Q3-16	3680	1.6	<20	<0.1	28.8 JB	33.5 JB	<110	<110	<2J
Q4-16	2530	1.4	<20	<0.11	13.9 JB	14.4 JB	57.3 J	57.3 J	<2.1
S-43D									
Q2-16	2230	11.3	<20	<0.11	<50	53.2	<100	<100	<2.1J
Q3-16	4270	11.6	<20	<0.1	43.5 JB	63.8 B	35.1 JB	35.1 JB	<2J
Q4-16	1680	10.2	<20	<0.1	27.6 JB	50.1 B	53.5 JB	55.3 JB	<2
S-43S									
Q2-16	2570	11	12.8 J	<0.11	<50	63.5	80.3 J	80.3 J	<2.1J
Q3-16	5060	9.8	<20	<0.1	46.5 JB	77 B	39.1 JB	39.5 JB	<2J
Q4-16	1990	10.4	6 J	<0.11	29.7 JB	59.5 B	77.7 J	80.6 J	<2.1

Notes:

¹ April 2016 Puerto Rico Water Quality Standards Regulation for Class SG groundwater

--- No MCL, RSL, or PRWQS is available for this compound.

Values which exceed the MCL, RSL, or PRWQS are shown shaded.

B - Compound found in associated method blank

J - Indicates an estimated value

JB - Value is estimated due to presence of compound in method blank.

Table 20
Release Assessment Phase 2A Groundwater Analytical Results - December 2016

Parameter	Residential Groundwater Concentration for Vapor Intrusion	Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or May 2016 Tap Water RSL	April 2016 PRWQS ¹	OSMW-1D 12/2/2016	OSMW-1S 12/2/2016	OSMW-2D 12/2/2016	OSMW-2S 12/2/2016	OSMW-3D 12/1/2016	OSMW-3S 12/6/2016	OSMW-4D 12/1/2016	OSMW-4D DUP 12/1/2016	OSMW-4S 12/6/2016	OSMW-5D 12/5/2016	OSMW-5S 12/5/2016	OSMW-6D 12/5/2016	OSMW-6S 12/5/2016
Volatile Organic Compounds Analytical Results (ug/L)																	
1,2-Dichloroethane	1.8	7.8	5	3.8	<1	<1	<1J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dioxane	2200	9600	0.46	---	1600	1060	17	33.8	4.13	1.73	17.9	17.8	31.5	70.4	63.4	2.54	1.7
Benzene	1.3	5.6	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	0.66	2.9	8	57	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	6	25	200	---	11.3	<2	<2	1J	<2	<2	<2	<2	<2	<2	<2	<2	<2
Methyl Tert-Butyl Ether (MTBE)	370	1600	14	14	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
tert-Amyl Alcohol	4100	17000	6.3	---	<20	<20	<20J	<20	<20J	<20	<20J	<20	<20	<20	<20	<20	<20
Vinyl Chloride	0.13	2.1	2	0.25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Polycyclic Aromatic Hydrocarbons Analytical Results (ug/L)																	
Benzo(a)anthracene	---	---	0.012	0.038	<0.05J	<0.051J	<0.056	<0.053J	<0.053	<0.05J	<0.051	<0.05	<0.051J	<0.052J	<0.052J	<0.051J	<0.051J
Naphthalene	3.2	14	0.17	0.17	<0.1	<0.1	<0.11	<0.11	<0.11	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Volatile Petroleum Hydrocarbons Analytical Results (ug/L)																	
C9-C10 Aromatics (Unadj.)	---	---	5.5	---	<50	<50	18.9JB	<50	21JB	<50	18.4JB	19.9JB	<50	<50	<50	<50	<50
Extractable Petroleum Hydrocarbons Analytical Results (ug/L)																	
C11-C22 Aromatics	---	---	5.5	---	<100	<100	39.1J	52.8JB	46.1J	30.5J	72.8J	58.2J	32.7J	<100	47.1J	31.7JB	<110
C11-C22 Aromatics (Unadj.)	---	---	5.5	---	<100	<100	39.1J	52.8JB	46.1J	30.5J	72.8J	58.2J	32.7J	<100	47.1J	31.7JB	<110
Semivolatile Organic Compounds Analytical Results (ug/L)																	
Benzaldehyde	---	---	19	---	<5	<5.1	<5.6	<5.3	<5.3	<5	<5.1	<5	<5.1	<5.2	<5.2	<5.1	<5.1
Organochlorine Pesticides Analytical Results (ug/L)																	
Dieldrin	---	---	0.0018	0.00052	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.011	<0.011	<0.011	<0.011	<0.011
Monitored Natural Attenuation Parameters Analytical Results (ug/L)																	
Iron	---	---	14000	---	NA	3880	NA	1040	NA	3020	NA	NA	3020	NA	1760	NA	1750
Manganese	---	---	430	---	NA	664	NA	348	NA	379	NA	NA	454	NA	466	NA	923
Alkalinity, Total	---	---	---	---	NA	279000	NA	251000	NA	214000	NA	NA	335000	NA	245000	NA	541000
Iron, Ferric	---	---	---	---	NA	3900J	NA	1000J	NA	3000J	NA	NA	2900J	NA	1700J	NA	1700J
Iron, Ferrous	---	---	---	---	NA	<200J	NA	<200J	NA	<200J	NA	NA	<200J	NA	<200J	NA	<200J
Methane	---	---	---	---	NA	525	NA	59.5	NA	3.2	NA	NA	246	NA	1260	NA	1990
Nitrogen, Nitrate	---	---	10000	---	NA	<110	NA	<110	NA	<110	NA	NA	<110	NA	<110	NA	110
Nitrogen, Nitrate + Nitrite	---	---	---	---	NA	<100	NA	<100	NA	<100	NA	NA	<100	NA	<100	NA	110
Nitrogen, Nitrite	---	---	1000	---	NA	<10	NA	<10	NA	<10	NA	NA	<10	NA	<10	NA	<10
Sulfate	---	---	---	---	NA	<10000	NA	16300	NA	22100	NA	NA	<10000	NA	<10000	NA	<10000
Sulfide	---	---	---	---	NA	<2000	NA	<2000	NA	<2000	NA	NA	<2000	NA	<2000	NA	<2000

Notes:

¹ April 2016 Puerto Rico Water Quality Standards Regulation for Class SG groundwater

--- No MCL, RSL, or PRWQS is available for this compound.

Detected values are shown in bold. Values which exceed the MCL, RSL, or PRWQS are shown shaded.

B - Compound found in associated method blank

J - Indicates an estimated value

JB - Value is estimated due to presence of compound in method blank.

NA - Sample was not analyzed for this parameter.

Table 21
Release Assessment Phase 2A Program 2016 Groundwater Analytical Results

Parameter	1,4-Dioxane	Dichlorodifluoro-methane	C9-C10 Aromatics (Unadj.)	C11-C22 Aromatics	C11-C22 Aromatics (Unadj.)
Screening Level	Concentration (ug/L)				
USEPA	0.46	200	5.5	5.5	5.5
PRWQS ¹	---	---	---	---	---
Residential GW VI	2200	6	---	---	---
Industrial GW VI	9600	25	---	---	---
Sample Round	OSMW-1D				
Q3-16	1290	NA	NA	<100	<100
Q4-16	1600	11.3	<50	<100	<100
	OSMW-1S				
Q3-16	1060	NA	NA	<100	<100
Q4-16	1060	<2	<50	<100	<100
	OSMW-2D				
Q3-16	14.4	NA	NA	<100	<100
Q4-16	17	<2	18.9 JB	39.1 J	39.1 J
	OSMW-2S				
Q3-16	16.4	NA	NA	<110	<110
Q4-16	33.8	1J	<50	52.8 JB	52.8 JB
	OSMW-3D				
Q3-16	<0.1	NA	NA	<110	<110
Q4-16	4.13	<2	21 JB	46.1 J	46.1 J
	OSMW-3S				
Q3-16	5.75	NA	NA	<110	<110
Q4-16	1.73	<2	<50	30.5 J	30.5 J
	OSMW-4D				
Q3-16	28.4	NA	NA	<100	<100
Q4-16	17.9	<2	18.4 JB	72.8 J	72.8 J
	OSMW-4S				
Q3-16	49.8	NA	NA	<100	<100
Q4-16	31.5	<2	<50	32.7 J	32.7 J
	OSMW-5D				
Q3-16	55.2	NA	NA	36 J	36 J
Q4-16	70.4	<2	<50	<100	<100
	OSMW-5S				
Q3-16	55.5	NA	NA	36.2 J	36.2 J
Q4-16	63.4	<2	<50	47.1 J	47.1 J

Table 21
Release Assessment Phase 2A Program 2016 Groundwater Analytical Results

Parameter	1,4-Dioxane	Dichlorodifluoro-methane	C9-C10 Aromatics (Unadj.)	C11-C22 Aromatics	C11-C22 Aromatics (Unadj.)
Screening Level	Concentration (ug/L)				
USEPA	0.46	200	5.5	5.5	5.5
PRWQS ¹	---	---	---	---	---
Residential GW VI	2200	6	---	---	---
Industrial GW VI	9600	25	---	---	---
OSMW-6D					
Q3-16	2.22	NA	NA	55.1 JB	56.1 JB
Q4-16	2.54	<2	<50	31.7 JB	31.7 JB
OSMW-6S					
Q3-16	0.821	NA	NA	51.1 JB	52 JB
Q4-16	1.7	<2	<50	<110	<110

Notes:

¹ April 2016 Puerto Rico Water Quality Standards Regulation for Class SG groundwater.

--- No MCL, RSL, or PRWQS is available for this compound.

Values which exceed the MCL, RSL, or PRWQS are shown shaded.

B - Compound found in associated method blank.

J - Indicates an estimated value.

JB - Value is estimated due to presence of compound in method blank.

NA - Sample was not analyzed for this parameter.

Table 22
Building 8 Indoor Air Sample Results - January 2017

Parameter	May 2016 USEPA Industrial Indoor Air Screening Level	B8IA-2 1/23/2017	B8IA-2 DUP 1/23/2017	B8AA 1/23/2017
TO-15 Compounds (ug/m³)				
1,1,1-Trichloroethane	22000	<0.95	<1	<0.8
1,1,2,2-Tetrachloroethane	0.21	<1.2	<1.3	<1
1,1,2-Trichloroethane	0.77	<0.95	<1	<0.8
1,1-Dichloroethane	7.7	<0.71	<0.76	<0.59
1,1-Dichloroethene	880	<0.69	<0.74	<0.58
1,2,4-Trichlorobenzene	8.8	<6.5	<6.9	<5.4
1,2,4-Trimethylbenzene	31	<0.86	<0.92	<0.72
1,2-Dibromoethane (EDB)	0.02	<1.3	<1.4	<1.1
1,2-Dichlorobenzene	880	<1	<1.1	<0.88
1,2-Dichloroethane	0.47	<0.71	<0.76	<0.59
1,2-Dichloropropane	1.2	<0.81	<0.86	<0.67
1,3,5-Trimethylbenzene	---	<0.86	<0.92	0.15J
1,3-Butadiene	0.41	<0.39	<0.41	<0.32
1,3-Dichlorobenzene	---	<1	<1.1	<0.88
1,4-Dichlorobenzene	1.1	<1	<1.1	<0.88
1,4-Dioxane	2.5	<0.63	<0.67	<0.53
2,2,4-Trimethylpentane	---	<4.1	<4.4	0.47J
2-Butanone (Methyl Ethyl Ketone)	22000	6.3	8.8	2.1J
2-Hexanone	130	1.2J	<3.8	<3
2-Propanol	880	4.5	7.7	5.2
3-Chloropropene	2	<2.7	<2.9	<2.3
4-Ethyltoluene	---	<0.86	<0.92	<0.72
4-Methyl-2-pentanone	13000	0.45J	0.8	<0.6
Acetone	140000	28	42	12
alpha-Chlorotoluene	0.25	<0.9	<0.97	<0.76
Benzene	1.6	0.72	0.67	0.65
Bromodichloromethane	0.33	<1.2	<1.2	<0.98
Bromoform	11	<1.8	<1.9	<1.5
Bromomethane	22	<3.4	<3.6	<2.8
Carbon Disulfide	3100	<2.7	<2.9	<2.3
Carbon Tetrachloride	2	0.53J	0.5J	0.53J
Chlorobenzene	220	<0.8	<0.86	<0.67
Chloroethane	44000	<2.3	<2.5	<1.9
Chloroform	0.53	0.19J	1	0.23J
Chloromethane	390	1.8	2.7	2
cis-1,2-Dichloroethene	---	<0.69	<0.74	<0.58
cis-1,3-Dichloropropene	---	<0.79	<0.85	<0.66
Cumene	1800	<0.86	<0.92	<0.72
Cyclohexane	26000	<0.6	<0.64	<0.5
Dibromochloromethane	---	<1.5	<1.6	<1.2
Ethanol	---	8.6J	7.6J	7.3J
Ethyl Benzene	4.9	0.27J	0.41J	0.22J

Table 22
Building 8 Indoor Air Sample Results - January 2017

Parameter	May 2016 USEPA Industrial Indoor Air Screening Level	B8IA-2 1/23/2017	B8IA-2 DUP 1/23/2017	B8AA 1/23/2017
TO-15 Compounds (ug/m³)				
Freon 11	---	1.1	1.2	1.4
Freon 113	130000	0.51J	0.58J	0.41J
Freon 114	---	<1.2	<1.3	<1
Freon 12	440	2.3	2.1	2.4
Heptane	---	<0.72	<0.77	0.73
Hexachlorobutadiene	0.56	<9.3	<10	<7.8
Hexane	3100	0.76	0.82	0.98
m,p-Xylene	440	1.1	0.92	0.81
Methanol	88000	<110	<120	<96
Methyl tert-butyl ether	47	<0.63	<0.67	<0.53
Methylene Chloride	1200	0.41J	0.29J	0.44J
Naphthalene	0.36	<4.6	<4.9	<3.8
Naphthalene (TO-17)	0.36	0.077	0.082	0.082
o-Xylene	440	0.43J	0.32J	0.3J
Propylbenzene	4400	<0.86	0.12J	0.1J
Styrene	4400	0.22J	0.27J	0.16J
Tetrachloroethene	47	<1.2	<1.3	<0.99
Tetrahydrofuran	8800	1.2J	1.2J	<2.2
Toluene	22000	1.7	1.7	1.5
trans-1,2-Dichloroethene	---	<0.69	<0.74	<0.58
trans-1,3-Dichloropropene	---	<0.79	<0.85	<0.66
Trichloroethene	3	<0.94	1.1	<0.78
Vinyl Chloride	2.8	<0.45	<0.48	<0.37
Methane (%)				
Methane	0.5	0.00028	0.00024	0.00024

Notes:

Detected Concentrations are bold

Detected concentrations that exceed the commercial indoor air screening level are shaded.

--- USEPA has not developed an indoor air screening level for this parameter

J - Estimated value. Parameter was detected at a concentration greater than the method detection limit (MDL) but less than the reporting limit (RL).

Table 23
Building 8 Sub-Slab Sample Results - January 2017

Parameter	May 2016 USEPA Industrial Sub-Slab Screening Level	B8SS-2 1/24/2017	B8SS-2 DUP 1/24/2017
TO-15 Compounds (ug/m³)			
1,1,1-Trichloroethane	730000	<680	<660
1,1,2,2-Tetrachloroethane	7	<850	<830
1,1,2-Trichloroethane	26	<680	<660
1,1-Dichloroethane	260	<500	<490
1,1-Dichloroethene	29000	<490	<480
1,2,4-Trichlorobenzene	290	<3700	<3600
1,2,4-Trimethylbenzene	1000	<610	<590
1,2-Dibromoethane (EDB)	0.68	<960	<930
1,2-Dichlorobenzene	29000	<750	<730
1,2-Dichloroethane	16	<500	<490
1,2-Dichloropropane	41	<580	<560
1,3,5-Trimethylbenzene	---	<610	<590
1,3-Butadiene	14	<280	<270
1,3-Dichlorobenzene	---	<750	<730
1,4-Dichlorobenzene	37	<750	<730
1,4-Dioxane	82	<1800	<1700
2,2,4-Trimethylpentane	---	<580	470J
2-Butanone (Methyl Ethyl Ketone)	730000	<1500	<1400
2-Hexanone	4400	<2000	<2000
2-Propanol	29000	<1200	<1200
3-Chloropropene	68	<1600	<1500
4-Ethyltoluene	---	<610	<590
4-Methyl-2-pentanone	440000	<510	<500
Acetone	4500000	<1200	<1100
alpha-Chlorotoluene	8.3	<640	<630
Benzene	52	<400	<390
Bromodichloromethane	11	<830	<810
Bromoform	370	<1300	<1200
Bromomethane	730	<1900	<1900
Carbon Disulfide	100000	<1600	<1500
Carbon Tetrachloride	68	<780	<760
Chlorobenzene	7300	<570	<560
Chloroethane	1500000	<1300	<1300
Chloroform	18	<610	<590
Chloromethane	13000	<1000	<1000
cis-1,2-Dichloroethene	---	<490	<480
cis-1,3-Dichloropropene	---	<560	<550
Cumene	58000	640	580J
Cyclohexane	880000	3600	3400
Dibromochloromethane	---	<1100	<1000
Ethanol	---	<940	<910
Ethyl Benzene	160	<540	<520

Table 23
Building 8 Sub-Slab Sample Results - January 2017

Parameter	May 2016 USEPA Industrial Sub-Slab Screening Level	B8SS-2 1/24/2017	B8SS-2 DUP 1/24/2017
TO-15 Compounds (ug/m³)			
Freon 11	---	<700	<680
Freon 113	4400000	<950	<930
Freon 114	---	<870	<840
Freon 12	15000	<620	<600
Heptane	---	2000	1800
Hexachlorobutadiene	19	<5300	<5200
Hexane	100000	1300	1300
m,p-Xylene	15000	220J	280J
Methanol	2900000	<160	<160
Methyl tert-butyl ether	1600	920	900
Methylene Chloride	41000	<1700	<1700
Naphthalene	12	<2600	<2500
Naphthalene (TO-17)	12	NA	<2.5
o-Xylene	15000	<540	<520
Propylbenzene	150000	<610	<590
Styrene	150000	<530	<520
Tetrachloroethene	1600	<840	<820
Tetrahydrofuran	290000	<370	<360
Toluene	730000	<470	81J
trans-1,2-Dichloroethene	---	<490	<480
trans-1,3-Dichloropropene	---	<560	<550
Trichloroethene	100	<670	<650
Vinyl Chloride	93	<320	<310
Methane (%)			
Methane	0.5	34	33

Notes:

Detected Concentrations are bold

Detected concentrations that exceed the commercial indoor air screening level are shaded.

--- USEPA has not developed an indoor air screening level for this parameter

J - Estimated value. Parameter was detected at a concentration greater than the method detection limit (MDL) but less than the reporting limit (RL).

NA - Results for this sample were not reported due to significant matrix interference.

Table 24
Building 13 Indoor Air Sample Results - January 2017

Parameter	May 2016 USEPA Industrial Indoor Air Screening Level	B13IA-1 1/29/2017	B13IA-2 1/29/2017	B13IA-2 DUP 1/29/2017	B13IA-3 1/29/2017	B1315AA 1/29/2017
TO-15 Compounds (ug/m³)						
1,1,1-Trichloroethane	22000	<0.89	<0.88	<0.84	<0.89	<0.93
1,1,2,2-Tetrachloroethane	0.21	<1.1	<1.1	<1.1	<1.1	<1.2
1,1,2-Trichloroethane	0.77	<0.89	<0.88	<0.84	<0.89	<0.93
1,1-Dichloroethane	7.7	<0.66	<0.65	<0.63	<0.66	<0.69
1,1-Dichloroethene	880	<0.65	<0.64	<0.61	<0.65	<0.68
1,2,4-Trichlorobenzene	8.8	<6.1	<6	<5.8	<6.1	<6.3
1,2,4-Trimethylbenzene	31	<0.81	<0.79	<0.76	<0.81	<0.84
1,2-Dibromoethane (EDB)	0.02	<1.3	<1.2	<1.2	<1.3	<1.3
1,2-Dichlorobenzene	880	<0.99	<0.97	<0.93	<0.99	<1
1,2-Dichloroethane	0.47	<0.66	<0.65	<0.63	<0.66	<0.69
1,2-Dichloropropane	1.2	<0.76	<0.74	<0.72	<0.76	<0.79
1,3,5-Trimethylbenzene	---	<0.81	<0.79	<0.76	<0.81	<0.84
1,3-Butadiene	0.41	<0.36	<0.36	<0.34	<0.36	<0.38
1,3-Dichlorobenzene	---	<0.99	<0.97	<0.93	<0.99	<1
1,4-Dichlorobenzene	1.1	<0.99	<0.97	<0.93	<0.99	<1
1,4-Dioxane	2.5	<0.59	1.8	<0.56	<0.59	<0.62
2,2,4-Trimethylpentane	---	<3.8	<3.8	<3.6	<3.8	<4
2-Butanone (Methyl Ethyl Ketone)	22000	2.1J	2.7	3.1	2.9	1J
2-Hexanone	130	<3.4	<3.3	<3.2	0.7J	<3.5
2-Propanol	880	0.98J	1.6J	1.5J	0.88J	0.63J
3-Chloropropene	2	<2.6	<2.5	<2.4	<2.6	<2.7
4-Ethyltoluene	---	<0.81	<0.79	<0.76	<0.81	<0.84
4-Methyl-2-pentanone	13000	<0.67	<0.66	0.22J	0.18J	<0.7
Acetone	140000	7.6	15	11	9.8	6.6
alpha-Chlorotoluene	0.25	<0.85	<0.83	<0.8	<0.85	<0.88
Benzene	1.6	<0.52	0.51	<0.5	<0.52	<0.55
Bromodichloromethane	0.33	<1.1	<1.1	<1	<1.1	<1.1
Bromoform	11	<1.7	0.19J	<1.6	<1.7	<1.8
Bromomethane	22	<3.2	<3.1	<3	<3.2	<3.3
Carbon Disulfide	3100	<2.6	2.6	<2.4	<2.6	<2.7
Carbon Tetrachloride	2	<1	0.42J	0.54J	<1	0.51J
Chlorobenzene	220	<0.76	<0.74	<0.71	<0.76	<0.79
Chloroethane	44000	<2.2	<2.1	<2	<2.2	<2.2
Chloroform	0.53	<0.8	<0.79	<0.76	0.18J	<0.83
Chloromethane	390	1.2J	1.4J	1.3J	1.2J	1.1
cis-1,2-Dichloroethene	---	<0.65	<0.64	<0.61	<0.65	<0.68
cis-1,3-Dichloropropene	---	<0.74	<0.73	<0.7	<0.74	<0.78
Cumene	1800	<0.81	<0.79	<0.76	<0.81	<0.84
Cyclohexane	26000	<0.56	<0.55	<0.53	<0.56	<0.59
Dibromochloromethane	---	<1.4	<1.4	<1.3	<1.4	<1.4
Ethanol	---	2.9	3.7	3.1	2.7	1.9
Ethyl Benzene	4.9	<0.71	<0.7	<0.67	<0.71	<0.74
Freon 11	---	1.1	1.2	1.1	1.1	1.1
Freon 113	130000	0.45J	0.38J	0.41J	0.4J	0.39J
Freon 114	---	<1.1	<1.1	<1.1	<1.1	<1.2
Freon 12	440	2	2	2.1	2.1	2
Heptane	---	<0.67	0.3J	<0.64	<0.67	<0.7
Hexachlorobutadiene	0.56	<8.7	<8.6	<8.3	<8.7	<9.1
Hexane	3100	<0.58	<0.57	<0.55	<0.58	<0.6
m,p-Xylene	440	<0.71	0.25J	0.2J	<0.71	<0.74
Methanol	88000	<110	<100	<100	<110	<110
Methyl tert-butyl ether	47	<0.59	<0.58	<0.56	<0.59	<0.62
Methylene Chloride	1200	<1.1	<1.1	0.18J	0.31J	0.2J

Table 24
Building 13 Indoor Air Sample Results - January 2017

Parameter	May 2016 USEPA Industrial Indoor Air Screening Level	B13IA-1 1/29/2017	B13IA-2 1/29/2017	B13IA-2 DUP 1/29/2017	B13IA-3 1/29/2017	B1315AA 1/29/2017
TO-15 Compounds (ug/m³)						
Naphthalene	0.36	0.15J	<4.2	<4.1	<4.3	<4.5
Naphthalene (TO-17)	0.36	<0.061	0.029	<0.06	<0.059	<0.058
o-Xylene	440	<0.71	<0.7	0.11J	<0.71	<0.74
Propylbenzene	4400	<0.81	<0.79	<0.76	<0.81	<0.84
Styrene	4400	0.34J	0.23J	0.18J	0.43J	<0.73
Tetrachloroethene	47	<1.1	<1.1	<1	<1.1	<1.2
Tetrahydrofuran	8800	1.9J	1.6J	1.4J	2.4J	<2.5
Toluene	22000	0.56J	1.7	1.5	0.5J	0.23J
trans-1,2-Dichloroethene	---	<0.65	<0.64	<0.61	<0.65	<0.68
trans-1,3-Dichloropropene	---	<0.74	0.19J	<0.7	<0.74	<0.78
Trichloroethene	3	<0.88	<0.86	<0.83	<0.88	<0.92
Vinyl Chloride	2.8	<0.42	<0.41	<0.4	<0.42	<0.44
Methane (%)						
Methane	0.5	0.00019	0.0002	0.00018	0.00016	0.00019

Notes:

Detected Concentrations are bold

Detected concentrations that exceed the commercial indoor air screening level are shaded.

--- USEPA has not developed an indoor air screening level for this parameter

J - Estimated value. Parameter was detected at a concentration greater than the method detection limit (MDL) but less than the reporting limit (RL).

Table 25
Building 13 Sub-Slab Sample Results - January 2017

Parameter	May 2016 USEPA Industrial Sub-Slab Screening Level	B13SS-1 1/29/2017	B13SS-2 1/29/2017	B13SS-2 DUP 1/29/2017	B13SS-3 1/29/2017
TO-15 Compounds (ug/m³)					
1,1,1-Trichloroethane	730000	<6.7	<14	<13	3.7J
1,1,2,2-Tetrachloroethane	7	<8.5	<18	<17	<8.8
1,1,2-Trichloroethane	26	<6.7	<14	<13	<7
1,1-Dichloroethane	260	<5	<10	1.9J	1.7J
1,1-Dichloroethene	29000	<4.9	<10	<9.7	<5.1
1,2,4-Trichlorobenzene	290	<37	<76	<73	<38
1,2,4-Trimethylbenzene	1000	2.4J	3.1J	3.3J	3.6J
1,2-Dibromoethane (EDB)	0.68	<9.5	<20	<19	<9.9
1,2-Dichlorobenzene	29000	<7.4	<16	<15	<7.8
1,2-Dichloroethane	16	<5	<10	<9.9	<5.2
1,2-Dichloropropane	41	<5.7	<12	<11	<6
1,3,5-Trimethylbenzene	---	0.83J	1.3J	1.2J	2.5J
1,3-Butadiene	14	<2.7	<5.7	<5.4	<2.8
1,3-Dichlorobenzene	---	9.7	12J	13J	17
1,4-Dichlorobenzene	37	<7.4	2.2J	1.7J	<7.8
1,4-Dioxane	82	<18	<37	<35	<18
2,2,4-Trimethylpentane	---	1.4J	<12	<11	6.4
2-Butanone (Methyl Ethyl Ketone)	730000	15	14J	16J	12J
2-Hexanone	4400	1.7J	<42	<40	<21
2-Propanol	29000	780	280	270	700
3-Chloropropene	68	<15	<32	<31	<16
4-Ethyltoluene	---	2.5J	2.2J	<12	3.9J
4-Methyl-2-pentanone	440000	1.2J	<10	<10	1J
Acetone	4500000	160	89	90	220
alpha-Chlorotoluene	8.3	<6.4	<13	<13	<6.7
Benzene	52	<3.9	<8.2	<7.8	<4.1
Bromodichloromethane	11	<8.3	<17	<16	<8.6
Bromoform	370	<13	<27	<25	<13
Bromomethane	730	<48	<100	<95	<50
Carbon Disulfide	100000	<15	4.7J	<30	3.3J
Carbon Tetrachloride	68	<7.8	<16	<15	<8.1
Chlorobenzene	7300	<5.7	<12	<11	<5.9
Chloroethane	1500000	<13	<27	<26	<14
Chloroform	18	<6	<12	<12	<6.3
Chloromethane	13000	<26	<53	<51	<27
cis-1,2-Dichloroethene	---	<4.9	<10	<9.7	<5.1
cis-1,3-Dichloropropene	---	<5.6	<12	<11	<5.8
Cumene	58000	<6.1	<13	<12	<6.3
Cyclohexane	880000	<4.2	310	310	19
Dibromochloromethane	---	<10	<22	<21	<11
Ethanol	---	410	150	130	370
Ethyl Benzene	160	1.7J	2.6J	2.4J	3J
Freon 11	---	1.5J	<14	<14	2.8J
Freon 113	4400000	<9.5	<20	<19	6.2J
Freon 114	---	<8.6	<18	<17	<9
Freon 12	15000	2.8J	2J	2.9J	3J
Heptane	---	<5.1	8.9J	8.8J	4.8J
Hexachlorobutadiene	19	<53	<110	<100	<55
Hexane	100000	<4.4	58	53	150
m,p-Xylene	15000	3.9J	4.5J	3.6J	7.4
Methanol	2900000	250	350	390	720
Methyl tert-butyl ether	1600	0.74J	22J	22J	6.2J
Methylene Chloride	41000	<43	<90	<85	<45

Table 25
Building 13 Sub-Slab Sample Results - January 2017

Parameter	May 2016 USEPA Industrial Sub-Slab Screening Level	B13SS-1 1/29/2017	B13SS-2 1/29/2017	B13SS-2 DUP 1/29/2017	B13SS-3 1/29/2017
TO-15 Compounds (ug/m³)					
Naphthalene	12	<13	<27	<26	<14
Naphthalene (TO-17)	12	<2.5	<2.5	1.7	<2.5
o-Xylene	15000	1.8J	2.9J	3J	3.7J
Propylbenzene	150000	0.65J	2.2J	2J	<6.3
Styrene	150000	<5.3	<11	<10	<5.5
Tetrachloroethene	1600	<8.4	16J	17	37
Tetrahydrofuran	290000	<3.6	<7.6	<7.2	<3.8
Toluene	730000	7.6	6.1J	5.4J	11
trans-1,2-Dichloroethene	---	<4.9	<10	<9.7	<5.1
trans-1,3-Dichloropropene	---	<5.6	<12	<11	<5.8
Trichloroethene	100	<6.6	<14	<13	1.7J
Vinyl Chloride	93	<3.2	<6.6	<6.3	<3.3
Methane (%)					
Methane	0.5	<0.00025	0.0029	0.0028	0.0013

Notes:

Detected Concentrations are bold

Detected concentrations that exceed the commercial indoor air screening level are shaded.

--- USEPA has not developed an indoor air screening level for this parameter

J - Estimated value. Parameter was detected at a concentration greater than the method detection limit (MDL) but less than the reporting limit (RL).

Table 26
Building 15 Indoor Air Sample Results - January 2017

Parameter	May 2016 USEPA Industrial Indoor air Screening Level	B15IA-1 1/29/2017	B15IA-1 DUP 1/29/2017	B1315AA 1/29/2017
TO-15 Compounds (ug/m³)				
1,1,1-Trichloroethane	22000	<1.5	<0.84	<0.93
1,1,2,2-Tetrachloroethane	0.21	<1.8	<1.1	<1.2
1,1,2-Trichloroethane	0.77	<1.5	<0.84	<0.93
1,1-Dichloroethane	7.7	<1.1	<0.63	<0.69
1,1-Dichloroethene	880	<1.1	<0.61	<0.68
1,2,4-Trichlorobenzene	8.8	<9.9	<5.8	<6.3
1,2,4-Trimethylbenzene	31	<1.3	0.21J	<0.84
1,2-Dibromoethane (EDB)	0.02	<2	<1.2	<1.3
1,2-Dichlorobenzene	880	<1.6	<0.93	<1
1,2-Dichloroethane	0.47	<1.1	<0.63	<0.69
1,2-Dichloropropane	1.2	<1.2	<0.72	<0.79
1,3,5-Trimethylbenzene	---	<1.3	<0.76	<0.84
1,3-Butadiene	0.41	<0.59	<0.34	<0.38
1,3-Dichlorobenzene	---	<1.6	<0.93	<1
1,4-Dichlorobenzene	1.1	<1.6	0.3J	<1
1,4-Dioxane	2.5	<0.96	<0.56	<0.62
2,2,4-Trimethylpentane	---	<6.2	<3.6	<4
2-Butanone (Methyl Ethyl Ketone)	22000	2.2J	4.2	1J
2-Hexanone	130	<5.5	<3.2	<3.5
2-Propanol	880	33	34	0.63J
3-Chloropropene	2	<4.2	<2.4	<2.7
4-Ethyltoluene	---	<1.3	0.16J	<0.84
4-Methyl-2-pentanone	13000	<1.1	<0.63	<0.7
Acetone	140000	15	22	6.6
alpha-Chlorotoluene	0.25	<1.4	<0.8	<0.88
Benzene	1.6	<0.86	<0.5	<0.55
Bromodichloromethane	0.33	<1.8	<1	<1.1
Bromoform	11	<2.8	<1.6	<1.8
Bromomethane	22	<5.2	<3	<3.3
Carbon Disulfide	3100	<4.2	<2.4	<2.7
Carbon Tetrachloride	2	<1.7	0.41J	0.51J
Chlorobenzene	220	<1.2	<0.71	<0.79
Chloroethane	44000	<3.5	<2	<2.2
Chloroform	0.53	<1.3	0.19J	<0.83
Chloromethane	390	1.1J	1.2J	1.1
cis-1,2-Dichloroethene	---	<1.1	<0.61	<0.68
cis-1,3-Dichloropropene	---	<1.2	<0.7	<0.78
Cumene	1800	<1.3	<0.76	<0.84
Cyclohexane	26000	<0.92	<0.53	<0.59
Dibromochloromethane	---	<2.3	<1.3	<1.4
Ethanol	---	480J	470J	1.9
Ethyl Benzene	4.9	<1.2	<0.67	<0.74

Table 26
Building 15 Indoor Air Sample Results - January 2017

Parameter	May 2016 USEPA Industrial Indoor air Screening Level	B15IA-1 1/29/2017	B15IA-1 DUP 1/29/2017	B1315AA 1/29/2017
TO-15 Compounds (ug/m³)				
Freon 11	---	1.1J	0.94	1.1
Freon 113	130000	0.47J	0.43J	0.39J
Freon 114	---	<1.9	<1.1	<1.2
Freon 12	440	2.3	2.1	2
Heptane	---	<1.1	<0.64	<0.7
Hexachlorobutadiene	0.56	<14	<8.3	<9.1
Hexane	3100	<0.94	<0.55	<0.6
m,p-Xylene	440	0.37J	0.41J	<0.74
Methanol	88000	<100	<100	<110
Methyl tert-butyl ether	47	<0.97	<0.56	<0.62
Methylene Chloride	1200	<1.9	0.32J	0.2J
Naphthalene	0.36	<7	<4.1	<4.5
Naphthalene (TO-17)	0.36	0.056	<0.059	<0.058
o-Xylene	440	0.19J	0.2J	<0.74
Propylbenzene	4400	<1.3	<0.76	<0.84
Styrene	4400	<1.1	0.19J	<0.73
Tetrachloroethene	47	<1.8	<1	<1.2
Tetrahydrofuran	8800	<4	<2.3	<2.5
Toluene	22000	0.89J	0.89	0.23J
trans-1,2-Dichloroethene	---	<1.1	<0.61	<0.68
trans-1,3-Dichloropropene	---	<1.2	<0.7	<0.78
Trichloroethene	3	<1.4	<0.83	<0.92
Vinyl Chloride	2.8	<0.68	<0.4	<0.44
Methane (%)				
Methane	0.5	0.00021	0.00016	0.00019

Notes:

Detected Concentrations are bold

Detected concentrations that exceed the commercial indoor air screening level are shaded.

--- USEPA has not developed an indoor air screening level for this parameter

J - Estimated value. Parameter was detected at a concentration greater than the method detection limit (MDL) but less than the reporting limit (RL).

E - Exceeds instrument calibration range.

Table 27
Building 15 Sub-Slab Sample Results - January 2017

Parameter	May 2016 USEPA Industrial Sub-Slab Screening Level	B15SS-1 1/29/2017	B15SS-1 DUP 1/29/2017
TO-15 Compounds (ug/m³)			
1,1,1-Trichloroethane	730000	<6.5	<6.7
1,1,2,2-Tetrachloroethane	7	<8.2	<8.5
1,1,2-Trichloroethane	26	<6.5	<6.7
1,1-Dichloroethane	260	<4.8	<5
1,1-Dichloroethene	29000	<4.7	<4.9
1,2,4-Trichlorobenzene	290	<35	<37
1,2,4-Trimethylbenzene	1000	2J	1.1J
1,2-Dibromoethane (EDB)	0.68	<9.1	<9.5
1,2-Dichlorobenzene	29000	<7.2	<7.4
1,2-Dichloroethane	16	<4.8	<5
1,2-Dichloropropane	41	<5.5	<5.7
1,3,5-Trimethylbenzene	---	0.53J	<6.1
1,3-Butadiene	14	<2.6	<2.7
1,3-Dichlorobenzene	---	13	6.2J
1,4-Dichlorobenzene	37	<7.2	<7.4
1,4-Dioxane	82	<17	<18
2,2,4-Trimethylpentane	---	2.7J	<5.8
2-Butanone (Methyl Ethyl Ketone)	730000	10J	15
2-Hexanone	4400	<19	3.2J
2-Propanol	29000	160	140
3-Chloropropene	68	<15	<15
4-Ethyltoluene	---	2.1J	1.1J
4-Methyl-2-pentanone	440000	0.95J	1.3J
Acetone	4500000	330J	230J
alpha-Chlorotoluene	8.3	<6.2	<6.4
Benzene	52	<3.8	<3.9
Bromodichloromethane	11	<8	<8.3
Bromoform	370	<12	<13
Bromomethane	730	<46	<48
Carbon Disulfide	100000	2.6J	3.2J
Carbon Tetrachloride	68	<7.5	<7.8
Chlorobenzene	7300	<5.5	<5.7
Chloroethane	1500000	<12	<13
Chloroform	18	<5.8	<6
Chloromethane	13000	<24	<26
cis-1,2-Dichloroethene	---	<4.7	<4.9
cis-1,3-Dichloropropene	---	<5.4	<5.6
Cumene	58000	<5.8	<6.1
Cyclohexane	880000	1.3J	0.76J
Dibromochloromethane	---	<10	<10
Ethanol	---	120J	280J
Ethyl Benzene	160	1.1J	0.59J

Table 27
Building 15 Sub-Slab Sample Results - January 2017

Parameter	May 2016 USEPA Industrial Sub-Slab Screening Level	B15SS-1 1/29/2017	B15SS-1 DUP 1/29/2017
TO-15 Compounds (ug/m³)			
Freon 11	---	1.2J	1.4J
Freon 113	4400000	<9.1	<9.5
Freon 114	---	<8.3	<8.6
Freon 12	15000	2.4J	2.8J
Heptane	---	2.6J	<5.1
Hexachlorobutadiene	19	<51	<53
Hexane	100000	2.4J	<4.4
m,p-Xylene	15000	2.4J	1.6J
Methanol	2900000	310	220
Methyl tert-butyl ether	1600	<17	<18
Methylene Chloride	41000	<41	<43
Naphthalene	12	<12	<13
Naphthalene (TO-17)	12	1.7	<2.5
o-Xylene	15000	1.6J	<5.4
Propylbenzene	150000	<5.8	<6.1
Styrene	150000	0.6J	<5.3
Tetrachloroethene	1600	1.3J	<8.4
Tetrahydrofuran	290000	<3.5	<3.6
Toluene	730000	10	5.5
trans-1,2-Dichloroethene	---	<4.7	<4.9
trans-1,3-Dichloropropene	---	<5.4	<5.6
Trichloroethene	100	<6.4	<6.6
Vinyl Chloride	93	<3	<3.2
Methane (%)			
Methane	0.5	<0.00045	0.00014J

Notes:

Detected Concentrations are bold

Detected concentrations that exceed the commercial indoor air screening level are shaded.

--- USEPA has not developed an indoor air screening level for this parameter.

J - Estimated value. Parameter was detected at a concentration greater than the method detection limit (MDL) but less than the reporting limit (RL).

E - Exceeds instrument calibration range.

Table 28
Building 18 Indoor Air Sample Results - January 2017

Parameter	May 2016 USEPA Industrial Indoor Air Screening Level	B18IA-1 1/21/2017	B18IA-1 DUP 1/21/2017	B18IA-2 1/21/2017	B18IA-3 1/21/2017	B18IA-4 1/21/2017	B18IA-5 1/29/2017	B1830AA 1/21/2017
TO-15 Compounds (ug/m³)								
1,1,1-Trichloroethane	22000	<0.98	<0.92	<0.95	<0.86	<0.77	<0.89	<0.89
1,1,2,2-Tetrachloroethane	0.21	<1.2	<1.2	<1.2	<1.1	<0.97	<1.1	<1.1
1,1,2-Trichloroethane	0.77	<0.98	<0.92	<0.95	<0.86	<0.77	<0.89	<0.89
1,1-Dichloroethane	7.7	<0.72	<0.68	<0.71	<0.64	<0.57	<0.66	<0.66
1,1-Dichloroethene	880	<0.71	<0.67	<0.69	<0.63	<0.56	<0.65	<0.65
1,2,4-Trichlorobenzene	8.8	<6.6	<6.2	<6.5	<5.9	<5.2	<6.1	<6.1
1,2,4-Trimethylbenzene	31	0.55J	0.59J	0.33J	<0.78	<0.69	0.76J	0.55J
1,2-Dibromoethane (EDB)	0.02	<1.4	<1.3	<1.3	<1.2	<1.1	<1.3	<1.3
1,2-Dichlorobenzene	880	<1.1	<1	<1	<0.95	<0.85	<0.99	<0.99
1,2-Dichloroethane	0.47	6.2J	7.4J	4.5J	0.35J	2.7	2.6	<0.66
1,2-Dichloropropane	1.2	<0.83	<0.78	<0.81	<0.73	<0.65	<0.76	<0.76
1,3,5-Trimethylbenzene	---	<0.88	0.21J	<0.86	<0.78	0.21J	0.25J	0.32J
1,3-Butadiene	0.41	<0.4	<0.37	<0.39	<0.35	<0.31	<0.36	<0.36
1,3-Dichlorobenzene	---	<1.1	<1	<1	<0.95	<0.85	<0.99	<0.99
1,4-Dichlorobenzene	1.1	0.27J	0.27J	0.26J	<0.95	<0.85	<0.99	0.2J
1,4-Dioxane	2.5	<0.64	<0.6	<0.63	<0.57	0.22J	0.38J	<0.59
2,2,4-Trimethylpentane	---	<4.2	<3.9	<4.1	<3.7	0.51J	<3.8	<3.8
2-Butanone (Methyl Ethyl Ketone)	22000	6.8	5	6.2	3.4	8.1	4.6	3
2-Hexanone	130	0.9J	0.62J	1.7J	<3.2	1.1J	0.61J	0.8J
2-Propanol	880	7.8	10	10	4.7	18	9.1	4.9
3-Chloropropene	2	<2.8	<2.6	<2.7	<2.5	<2.2	<2.6	<2.6
4-Ethyltoluene	---	0.46J	0.5J	0.26J	<0.78	<0.69	0.55J	0.6J
4-Methyl-2-pentanone	13000	1.3J	1.2J	0.62J	0.36J	1	0.84	0.3J
Acetone	140000	380J	390J	660J	22	59	33	22
alpha-Chlorotoluene	0.25	<0.93	<0.87	<0.9	<0.82	<0.73	<0.85	<0.85
Benzene	1.6	0.62	0.74	0.55J	0.51	0.56	0.62	0.6
Bromodichloromethane	0.33	<1.2	<1.1	<1.2	<1	<0.94	<1.1	<1.1
Bromoform	11	<1.8	<1.7	<1.8	<1.6	<1.4	<1.7	<1.7
Bromomethane	22	<3.5	<3.3	<3.4	<3.1	<2.7	<3.2	<3.2
Carbon Disulfide	3100	0.29J	0.38J	0.37J	<2.5	<2.2	<2.6	2.9
Carbon Tetrachloride	2	0.49J	0.5J	0.47J	0.46J	0.58J	0.48J	1.1
Chlorobenzene	220	<0.82	<0.77	<0.8	<0.73	<0.65	<0.76	<0.76
Chloroethane	44000	<2.4	<2.2	<2.3	<2.1	<1.9	<2.2	<2.2
Chloroform	0.53	0.32J	0.34J	0.35J	0.17J	0.36J	0.22J	<0.8
Chloromethane	390	2.3	2.6	2.5	1.9	2.1	1.1J	2.4
cis-1,2-Dichloroethene	---	<0.71	<0.67	<0.69	<0.63	<0.56	<0.65	<0.65
cis-1,3-Dichloropropene	---	<0.81	<0.76	<0.79	<0.72	<0.64	<0.74	<0.74
Cumene	1800	<0.88	<0.82	<0.86	<0.78	<0.69	0.26J	<0.81
Cyclohexane	26000	0.2J	0.3J	0.22J	0.22J	0.58	0.26J	<0.56
Dibromochloromethane	---	<1.5	<1.4	<1.5	<1.3	<1.2	<1.4	<1.4
Ethanol	---	120	130	77	22J	140J	38	3.6
Ethyl Benzene	4.9	1	1.1	0.6J	0.43J	1.3	1.6	0.22J

Table 28
Building 18 Indoor Air Sample Results - January 2017

Parameter	May 2016 USEPA Industrial Indoor Air Screening Level	B18IA-1 1/21/2017	B18IA-1 DUP 1/21/2017	B18IA-2 1/21/2017	B18IA-3 1/21/2017	B18IA-4 1/21/2017	B18IA-5 1/29/2017	B1830AA 1/21/2017
<i>TO-15 Compounds (ug/m³)</i>								
Freon 11	---	16	17	24	3.2	11	17	2.2
Freon 113	130000	0.5J	0.53J	0.55J	0.58J	0.4J	0.37J	0.67J
Freon 114	---	<1.2	<1.2	<1.2	<1.1	<0.98	<1.1	<1.1
Freon 12	440	2.8	3	2.8	2.4	2	1.9	2.9
Heptane	---	0.45J	0.52J	0.47J	<0.65	0.77	0.76	0.63J
Hexachlorobutadiene	0.56	<9.5	<9	<9.3	<8.4	<7.5	<8.7	<8.7
Hexane	3100	0.45J	0.55J	0.44J	0.67	1.1	0.62	0.55J
m,p-Xylene	440	2.2	2.5	1.7	1.1	4.8	4.8	0.61J
Methanol	88000	<120		<110	<100	<92	110	<110
Methyl tert-butyl ether	47	<0.64	<0.6	<0.63	<0.57	<0.51	<0.59	<0.59
Methylene Chloride	1200	0.89J	0.96J	1.1J	0.27J	0.51J	0.49J	0.6J
Naphthalene	0.36	0.17J	0.13J	0.2J	<4.1	<3.7	0.74J	2.7J
Naphthalene (TO-17)	0.36	0.16	0.14	0.26	0.076	0.13	0.14	0.064
o-Xylene	440	1.2	0.97	0.68J	0.53J	2.3	2.3	0.25J
Propylbenzene	4400	<0.88	<0.82	<0.86	<0.78	0.2J	0.15J	<0.81
Styrene	4400	0.4J	0.37J	0.31J	0.21J	0.61	0.43J	0.16J
Tetrachloroethene	47	<1.2	<1.1	<1.2	<1.1	<0.96	<1.1	<1.1
Tetrahydrofuran	8800	<2.6	<2.5	<2.6	<2.3	<2.1	1.2J	<2.4
Toluene	22000	9.6	12	10	3	20	17	1.6
trans-1,2-Dichloroethene	---	<0.71	<0.67	<0.69	<0.63	<0.56	<0.65	<0.65
trans-1,3-Dichloropropene	---	<0.81	<0.76	<0.79	<0.72	<0.64	<0.74	<0.74
Trichloroethene	3	2.8	2.8	2.6	0.48J	2.4	2.1	<0.88
Vinyl Chloride	2.8	<0.46	<0.43	<0.45	<0.4	0.28J	<0.42	<0.42
<i>Methane (%)</i>								
Methane	0.5	0.0002	0.00021	0.00018	0.00022	0.00021	0.00027	0.00018

Notes:

Detected Concentrations are bold

Detected concentrations that exceed the commercial indoor air screening level are shaded.

--- USEPA has not developed an indoor air screening level for this parameter

J - Estimated value. Parameter was detected at a concentration greater than the method detection limit (MDL) but less than the reporting limit (RL).

E - Exceeds instrument calibration range.

J0 - Estimated value due to bias in the CCV.

Table 29
Building 18 Sub-Slab Sample Results - January 2017

Parameter	May 2016 USEPA Industrial Sub-Slab Screening Level	B18SS-1 1/26/2017	B18SS-1 DUP 1/26/2017	B18SS-2 1/26/2017	B18SS-3 1/26/2017	B18SS-4 1/26/2017	B18SS-5 1/26/2017
TO-15 Compounds (ug/m³)							
1,1,1-Trichloroethane	730000	<6.8	<6.7	<6.5	<6.6	<7.7	<6.9
1,1,2,2-Tetrachloroethane	7	<8.6	0.48J	<8.2	<8.3	<9.7	<8.6
1,1,2-Trichloroethane	26	<6.8	3.1J	<6.5	<6.6	<7.7	<6.9
1,1-Dichloroethane	260	<5	<5	<4.8	<4.9	<5.7	<5.1
1,1-Dichloroethene	29000	<5	<4.9	<4.7	<4.8	<5.6	<5
1,2,4-Trichlorobenzene	290	<37	<36	<35	<36	<42	<37
1,2,4-Trimethylbenzene	1000	1.2J	2.7J	<5.8	1.3J	3.9J	3.5J
1,2-Dibromoethane (EDB)	0.68	<9.6	<9.4	<9.1	<9.3	<11	<9.7
1,2-Dichlorobenzene	29000	<7.5	<7.4	<7.2	<7.3	<8.5	<7.6
1,2-Dichloroethane	16	<5	<5	<4.8	<4.9	<5.7	<5.1
1,2-Dichloropropane	41	<5.8	<5.7	<5.5	<5.6	<6.5	<5.8
1,3,5-Trimethylbenzene	---	<6.1	0.74J	<5.8	<5.9	1.1J	0.84J
1,3-Butadiene	14	<2.8	<2.7	<2.6	<2.7	<3.1	<2.8
1,3-Dichlorobenzene	---	7.2J	15	<7.2	8.6	24	15
1,4-Dichlorobenzene	37	<7.5	14	<7.2	<7.3	<8.5	<7.6
1,4-Dioxane	82	<18	<18	<17	<17	<20	<18
2,2,4-Trimethylpentane	---	<5.8	1.5J	5.6	1.9J	2.3J	2J
2-Butanone (Methyl Ethyl Ketone)	730000	6.2	13J	3.1J	23	18	20
2-Hexanone	4400	<20	2.2J	<19	3.1J	2.2J	3.2J
2-Propanol	29000	460J	880J	86	950	1600J	1200J
3-Chloropropene	68	<16	<15	<15	<15	<18	<16
4-Ethyltoluene	---	1.1J	3.1J	<5.8	1.3J	3.6J	2.8J
4-Methyl-2-pentanone	440000	<5.1	7.8	<4.9	1.3J	1.5J	1.7J
Acetone	4500000	<30	47	<28	170	59	62
alpha-Chlorotoluene	8.3	<6.5	<6.4	<6.2	<6.3	<7.3	<6.5
Benzene	52	<4	<3.9	<3.8	<3.9	<4.5	<4
Bromodichloromethane	11	<8.4	<8.2	<8	<8.1	<9.4	<8.4
Bromoform	370	<13	<13	<12	<12	<14	<13
Bromomethane	730	<48	<48	<46	<47	<55	<49
Carbon Disulfide	100000	3.7J	<15	<15	3J	<18	7.3J
Carbon Tetrachloride	68	<7.9	<7.7	<7.5	<7.6	<8.9	<7.9
Chlorobenzene	7300	<5.8	<5.7	<5.5	<5.6	<6.5	<5.8
Chloroethane	1500000	<13	<13	<12	<13	<15	<13
Chloroform	18	<6.1	<6	<5.8	<5.9	<6.9	2.2J
Chloromethane	13000	<26	<25	2.6J	<25	<29	<26
cis-1,2-Dichloroethene	---	<5	<4.9	<4.7	<4.8	<5.6	<5
cis-1,3-Dichloropropene	---	<5.7	<5.6	<5.4	<5.5	<6.4	<5.7
Cumene	58000	<6.1	1.4J	<5.8	<5.9	<6.9	<6.2
Cyclohexane	880000	<4.3	<4.2	<4.1	<4.2	1.2J	0.9J
Dibromochloromethane	---	<11	<10	<10	<10	<12	<11
Ethanol	---	270J	460J	170	540	780	590
Ethyl Benzene	160	1.4J	2J	<5.2	1.8J	3.4J	2.5J

Table 29
Building 18 Sub-Slab Sample Results - January 2017

Parameter	May 2016 USEPA Industrial Sub-Slab Screening Level	B18SS-1 1/26/2017	B18SS-1 DUP 1/26/2017	B18SS-2 1/26/2017	B18SS-3 1/26/2017	B18SS-4 1/26/2017	B18SS-5 1/26/2017
<i>TO-15 Compounds (ug/m³)</i>							
Freon 11	---	7.6	9.2	7.5	2.2J	1.9J	3.6J
Freon 113	4400000	<9.6	<9.4	<9.1	<9.3	<11	<9.6
Freon 114	---	<8.7	<8.6	<8.3	<8.4	<9.8	<8.8
Freon 12	15000	3.1J	2.5J	2.8J	2.6J	2.8J	2.2J
Heptane	---	<5.1	2	6.3	1.9J	2.7J	1.8J
Hexachlorobutadiene	19	<53	<52	<51	<52	<60	<54
Hexane	100000	<4.4	1.3J	8.4	1.5J	2J	1.5J
m,p-Xylene	15000	4.6J	7.8	1.4J	4.9J	10	7.6
Methanol	2900000	190	230	<160	470	220	190
Methyl tert-butyl ether	1600	<18	<18	<17	<17	<20	<18
Methylene Chloride	41000	<43	<43	<41	<42	<49	<44
Naphthalene	12	<13	<13	<12	<13	<15	<13
Naphthalene (TO-17)	12	1.3	1.2	1.2	1.7	1.3	1.8
o-Xylene	15000	2.2J	3.9J	<5.2	2.2J	5.5J	3.3J
Propylbenzene	150000	<6.1	0.66J	<5.8	<5.9	0.79J	0.72J
Styrene	150000	<5.3	0.64J	<5.1	<5.2	0.72J	<5.4
Tetrachloroethene	1600	<8.5	<8.3	<8.1	<8.2	<9.6	<8.5
Tetrahydrofuran	290000	<3.7	0.45J	<3.5	<3.6	<4.2	<3.7
Toluene	730000	5.4	8.1	3J	8.2	12	8.1
trans-1,2-Dichloroethene	---	<5	<4.9	<4.7	<4.8	<5.6	<5
trans-1,3-Dichloropropene	---	<5.7	17	<5.4	<5.5	<6.4	<5.7
Trichloroethene	100	<6.7	<6.6	<6.4	<6.5	<7.6	<6.8
Vinyl Chloride	93	<3.2	<3.1	<3	<3.1	<3.6	<3.2
<i>Methane (%)</i>							
Methane	0.5	0.00021J	<0.00025	0.00022J	0.00019J	<0.00028	0.00019J

Notes:

Detected Concentrations are bold

Detected concentrations that exceed the commercial indoor air screening level are shaded.

--- USEPA has not developed an indoor air screening level for this parameter

J - Estimated value. Parameter was detected at a concentration greater than the method detection limit (MDL) but less than the reporting limit (RL).

E - Exceeds instrument calibration range.

Table 30
Building 30 Indoor Air Sample Results - January 2017

Parameter	May 2016 USEPA Industrial Indoor Air Screening Level (ug/m ³)	B30IA-1 1/21/2017	B30IA-2 1/21/2017	B30IA-3 1/21/2017	B30IA-4 1/21/2017	B30IA-4 DUP 1/21/2017	B30IA-5 1/21/2017	B1830AA 1/21/2017
<i>Building 5 COCs (ug/m³)</i>								
Benzene	1.6	0.54	0.62	0.48J	0.46J	0.43J	0.68	0.6
Ethyl Benzene	4.9	0.27J	0.22J	0.37J	0.23J	0.27J	0.78	0.22J
Toluene	22000	1.9	2.4	2.5	2.2	2.2	3.4	1.6
m,p-Xylene	440	0.68J	0.53J	0.99	0.73	0.6J	2.8	0.61J
o-Xylene	440	0.29J	0.26J	0.32J	0.3J	0.25J	2.4	0.25J
4-Methyl-2-pentanone	13000	0.22J	0.45J	0.48J	0.52J	0.58J	0.43J	0.3J
Acetone	140000	23	27	19	42	43	27	22
Methanol	88000	<100	<110	<120	<100	<110	<110	<110
<i>Other TO-15 Compounds (ug/m³)</i>								
Methylene Chloride	1200	<1.1	<1.1	<1.3	<1.1	<1.2	<1.1	0.6J
Naphthalene (TO-15)	0.36	0.19J	<4.3	0.22J	0.31J	0.12J	3.4J	2.7J
Naphthalene (TO-17)	0.36	0.095	0.021	0.067	0.095	0.1	0.12	0.064
1,1,1-Trichloroethane	22000	<0.88	<0.89	<1	<0.88	<0.92	<0.89	<0.89
1,1,2,2-Tetrachloroethane	0.21	0.33J	<1.1	0.24J	<1.1	<1.2	<1.1	<1.1
1,1,2-Trichloroethane	0.77	<0.88	<0.89	<1	<0.88	<0.92	<0.89	<0.89
1,1-Dichloroethane	7.7	<0.65	<0.66	<0.77	<0.65	<0.68	<0.66	<0.66
1,1-Dichloroethene	880	<0.64	<0.65	<0.76	<0.64	<0.67	<0.65	<0.65
1,2,4-Trichlorobenzene	8.8	0.7J	<6.1	0.58J	0.3J	<6.2	<6.1	<6.1
1,2,4-Trimethylbenzene	31	0.28J	0.18J	0.22J	0.48J	0.2J	32	0.55J
1,2-Dibromoethane (EDB)	0.02	<1.2	<1.3	<1.5	<1.2	<1.3	<1.3	<1.3
1,2-Dichlorobenzene	880	<0.97	<0.99	<1.1	<0.97	<1	<0.99	<0.99
1,2-Dichloroethane	0.47	<0.65	1.8	<0.77	0.34J	0.39J	0.3J	<0.66
1,2-Dichloropropane	1.2	<0.74	<0.76	<0.88	<0.74	<0.78	<0.76	<0.76
1,3,5-Trimethylbenzene	--	<0.79	<0.81	<0.94	0.16J	<0.82	8.1	0.32J
1,3-Butadiene	0.41	<0.36	<0.36	<0.42	<0.36	<0.37	<0.36	<0.36
1,3-Dichlorobenzene	--	0.28J	<0.99	<1.1	<0.97	<1	<0.99	<0.99
1,4-Dichlorobenzene	1.1	0.36J	0.28J	0.4J	0.34J	0.28J	0.37J	0.2J
1,4-Dioxane	2.5	0.24J	<0.59	0.25J	<0.58	<0.6	0.24J	<0.59
2,2,4-Trimethylpentane	--	<3.8	<3.8	<4.5	<3.8	<3.9	<3.8	<3.8
2-Butanone (Methyl Ethyl Ketone)	22000	2.9	3.9	4.6	9.7	9	3.1	3
2-Hexanone	130	<3.3	0.52J	<3.9	1J	1.1J	<3.4	0.8J
2-Propanol	880	41	36	60	58	58	40	4.9
3-Chloropropene	2	<2.5	<2.6	<3	<2.5	<2.6	<2.6	<2.6
4-Ethyltoluene	--	0.25J	<0.81	<0.94	0.26J	0.18J	20	0.6J
alpha-Chlorotoluene	0.25	0.37J	<0.85	0.3J	<0.83	<0.87	<0.85	<0.85
Bromodichloromethane	0.33	<1.1	<1.1	<1.3	<1.1	<1.1	<1.1	<1.1
Bromoform	11	<1.7	<1.7	<2	<1.7	<1.7	<1.7	<1.7
Bromomethane	22	<3.1	<3.2	<3.7	<3.1	<3.3	<3.2	<3.2
Carbon Disulfide	3100	<2.5	<2.6	<3	0.27J	0.69J	0.28J	2.9
Carbon Tetrachloride	2	0.52J	0.41J	0.34J	0.45J	0.4J	0.4J	1.1
Chlorobenzene	220	<0.74	<0.76	<0.88	<0.74	<0.77	<0.76	<0.76
Chloroethane	44000	<2.1	<2.2	<2.5	<2.1	<2.2	<2.2	<2.2

Table 30
Building 30 Indoor Air Sample Results - January 2017

Parameter	May 2016 USEPA Industrial Indoor Air Screening Level (ug/m ³)	B30IA-1 1/21/2017	B30IA-2 1/21/2017	B30IA-3 1/21/2017	B30IA-4 1/21/2017	B30IA-4 DUP 1/21/2017	B30IA-5 1/21/2017	B1830AA 1/21/2017
Chloroform	0.53	0.18J	<0.8	<0.93	0.17J	0.18J	0.18J	<0.8
Chloromethane	390	2.2	1.7	2.1	2	2	2.4	2.4
cis-1,2-Dichloroethene	---	<0.64	<0.65	<0.76	<0.64	<0.67	<0.65	<0.65
cis-1,3-Dichloropropene	---	<0.73	<0.74	<0.87	<0.73	<0.76	<0.74	<0.74
Cumene	1800	<0.79	<0.81	<0.94	<0.79	<0.82	0.45J	<0.81
Cyclohexane	26000	0.14J	0.15J	<0.66	0.11J	0.13J	0.1J	<0.56
Dibromochloromethane	---	<1.4	<1.4	<1.6	<1.4	<1.4	<1.4	<1.4
Ethanol	---	14	27	35	49	90	80	3.6
Freon 11	---	1.7	1.9	1.6	1.8	2.2	2.2	2.2
Freon 113	130000	0.68J	0.53J	0.58J	0.66J	0.62J	0.63J	0.67J
Freon 114	---	<1.1	<1.1	<1.3	<1.1	<1.2	<1.1	<1.1
Freon 12	440	2.7	2.4	2.7	2.7	2.8	2.4	2.9
Heptane	---	0.4J	0.26J	0.2J	0.38J	0.54J	<0.67	0.63J
Hexachlorobutadiene	0.56	<8.6	<8.7	<10	<8.6	<9	<8.7	<8.7
Hexane	3100	0.52J	0.29J	0.29J	0.32J	0.26J	0.24J	0.55J
Methyl tert-butyl ether	47	<0.58	<0.59	<0.69	<0.58	<0.6	<0.59	<0.59
Propylbenzene	4400	<0.79	<0.81	<0.94	<0.79	<0.82	1.8	<0.81
Styrene	4400	0.32J	0.39J	0.43J	0.38J	0.36J	0.78	0.16J
Tetrachloroethene	47	<1.1	<1.1	<1.3	<1.1	<1.1	<1.1	<1.1
Tetrahydrofuran	8800	<2.4	<2.4	<2.8	<2.4	<2.5	<2.4	<2.4
trans-1,2-Dichloroethene	---	<0.64	<0.65	<0.76	<0.64	<0.67	<0.65	<0.65
trans-1,3-Dichloropropene	---	<0.73	<0.74	<0.87	<0.73	<0.76	<0.74	<0.74
Trichloroethene	3	<0.86	<0.88	<1	<0.86	<0.9	<0.88	<0.88
Vinyl Chloride	2.8	<0.41	<0.42	<0.49	<0.41	<0.43	<0.42	<0.42
Methane (%)								
Methane	0.5	0.0011	0.00044	0.00071	0.00056	0.00054	0.0004	0.00018

Notes:

Detected Concentrations are bold

Detected concentrations that exceed the commercial indoor air screening level are shaded.

--- USEPA has not developed an indoor air screening level for this parameter

J - Estimated value. Parameter was detected at a concentration greater than the method detection limit (MDL) but less than the reporting limit (RL).

Q - The internal standard associated with the analyte exceeded acceptance limits.

Table 31
Onsite Surface Soil Sample Results - January 2017

Parameter	Residential Soil		Industrial Soil		Former Tank Farm Area			Former Brule Incinerator Area			Building 5 Area		Background Locations			
	USEPA RSL	PREQB ¹	USEPA RSL	PREQB ¹	FTFSS-1 1/25/2017	FTFSS-2 1/25/2017	FTFSS-3 1/25/2017	BRSS-1 1/25/2017	BRSS-1 DUP 1/25/2017	BRSS-2 1/25/2017	B5SS-1 1/25/2017	B5SS-2 1/25/2017	BKGSS-1 1/26/2017	BKGSS-2 1/26/2017	BKGSS-2 DUP 1/26/2017	BKGSS-3 1/26/2017
	VOC Analytical Results (mg/kg)															
1,1,1-Trichloroethane	8100	---	36000	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
1,1,2,2-Tetrachloroethane	0.6	---	2.7	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
1,1,2-Trichloroethane	1.1	---	5	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
1,1-Dichloroethane	3.6	---	16	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
1,1-Dichloroethylene	230	---	1000	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
1,2,3-Trichlorobenzene	63	---	930	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006J	<0.0057	<0.0065	<0.0079	<0.0067J
1,2,4-Trichlorobenzene	24	---	110	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006J	<0.0057	<0.0065	<0.0079	<0.0067J
1,2,4-Trimethylbenzene	58	---	240	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
1,2-Dibromo-3-chloropropane	0.0053	---	0.064	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
1,2-Dibromoethane	0.036	0.036	0.16	0.16	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
1,2-Dichlorobenzene	1800	---	9300	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067J
1,2-Dichloroethane	0.46	---	2	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
1,2-Dichloroethylene (cis)	160	16	2300	230	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
1,2-Dichloroethylene (trans)	1600	160	23000	2300	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
1,2-Dichloropropane	1	---	4.4	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
1,3,5-Trimethylbenzene	780	---	12000	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
1,3-Dichlorobenzene	---	---	---	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
1,3-Dichloropropene (cis) ²	1.8	---	8.2	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
1,3-Dichloropropene (trans) ²	1.8	---	8.2	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
1,4-Dichlorobenzene	2.6	---	11	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
2-Butanone (MEK)	27000	---	190000	---	<0.025	<0.025	<0.033	NA	NA	NA	<0.023	<0.031	<0.028	<0.033	<0.039	<0.033
2-Chlorotoluene	1600	---	23000	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
2-Hexanone	200	---	1300	---	<0.025	<0.025	<0.033	NA	NA	NA	<0.023	<0.031	<0.028	<0.033	<0.039	<0.033
Acetone	61000	---	670000	---	0.025J	<0.05	<0.066	NA	NA	NA	<0.046	<0.061	<0.057	<0.065	<0.079	<0.067
Benzene	1.2	1.2	5.1	5.1	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
Benzyl Chloride	1.1	---	4.8	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006J	<0.0057	<0.0065	<0.0079	<0.0067J
Bromochloromethane	150	---	630	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
Bromodichloromethane	0.29	---	1.3	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
Bromoform	19	---	86	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
Bromomethane	6.8	---	30	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
Carbon Disulfide	770	---	3500	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
Carbon Tetrachloride	0.65	---	2.9	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
Chlorobenzene	280	---	1300	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
Chlorodibromomethane	8.3	---	39	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
Chloroethane	14000	---	57000	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
Chloroform	0.32	---	1.4	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
Chloromethane	110	---	460	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.			

Table 31
Onsite Surface Soil Sample Results - January 2017

Parameter	Residential Soil		Industrial Soil		Former Tank Farm Area			Former Brule Incinerator Area			Building 5 Area		Background Locations			
	USEPA RSL	PREQB ¹	USEPA RSL	PREQB ¹	FTFSS-1 1/25/2017	FTFSS-2 1/25/2017	FTFSS-3 1/25/2017	BRSS-1 1/25/2017	BRSS-1 DUP 1/25/2017	BRSS-2 1/25/2017	B5SS-1 1/25/2017	B5SS-2 1/25/2017	BKGSS-1 1/26/2017	BKGSS-2 1/26/2017	BKGSS-2 DUP 1/26/2017	BKGSS-3 1/26/2017
o-Xylene	650	---	2800	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
sec-Butylbenzene	7800	---	120000	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006J	<0.0057	<0.0065	<0.0079	<0.0067J
Styrene	6000	---	35000	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
tert-Amyl Alcohol	82	---	340	---	<0.05	<0.05	<0.066	NA	NA	NA	<0.046	<0.061	<0.057	<0.065	<0.079	<0.067
tert-Butyl alcohol	---	3200	---	19000	<0.05	<0.05	<0.066	NA	NA	NA	<0.046	<0.061J	<0.057	<0.065	<0.079	<0.067
Tetrachloroethylene	24	---	100	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
Tetrahydrofuran	18000	---	94000	---	<0.01	<0.01	<0.013	NA	NA	NA	<0.009	<0.012J	<0.011	<0.013	<0.016	<0.013J
Toluene	4900	490	47000	4700	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
Total Xylenes	580	58	2500	250	<0.015	<0.015	<0.02	NA	NA	NA	<0.014	<0.018	<0.017	<0.02	<0.024	<0.02
Trichloroethylene	0.94	---	6	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
Trichlorofluoromethane	23000	---	350000	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006J	<0.0057	<0.0065	<0.0079	<0.0067
Vinyl Chloride	0.059	---	1.7	---	<0.005	<0.005	<0.006	NA	NA	NA	<0.004	<0.006	<0.0057	<0.0065	<0.0079	<0.0067
LMA Analytical Results (mg/kg)																
1-Propanol	---	---	---	---	<0.11	<0.11	<0.11	NA	NA	NA	<0.11	<0.1	<0.12	<0.12	<0.12	<0.12
2-Butanol	130000	---	1500000	---	<0.11	<0.11	<0.11	NA	NA	NA	<0.11	<0.1	<0.12	<0.12	<0.12	<0.12
Ethanol	---	---	---	---	<0.11	<0.11	<0.11	NA	NA	NA	<0.11	<0.1	<0.12	<0.12	<0.12	<0.12
Isobutyl Alcohol	23000	---	350000	---	<0.11	<0.11	<0.11	NA	NA	NA	<0.11	<0.1	<0.12	<0.12	<0.12	<0.12
n-Butanol	7800	---	120000	---	<0.11	<0.11	<0.11	NA	NA	NA	<0.11	<0.1	<0.12	<0.12	<0.12	<0.12
PAH Analytical Results (mg/kg)																
1-Methylnaphthalene	18	---	73	---	<0.071	<0.073	<0.069	<0.074	<0.075	<0.083	<0.069	<0.069	<0.077	0.0187J	NA	<0.077
2-Methylnaphthalene	240	---	3000	---	<0.071	<0.073	<0.069	<0.074	<0.075	<0.083	<0.069	<0.069	<0.077	0.0178J	NA	<0.077
Acenaphthene	3600	350	45000	4500	<0.035	<0.036	<0.035	<0.037	<0.037	<0.042	<0.035	<0.034	0.0484	<0.042	NA	0.0366J
Acenaphthylene	---	---	---	---	<0.035	<0.036	<0.035	<0.037	<0.037	<0.042	<0.035	<0.034	<0.039	<0.042	NA	<0.038
Anthracene	18000	1700	230000	23000	<0.035	<0.036	<0.035	<0.037	<0.037	<0.042	<0.035	<0.034	0.144	<0.042	NA	0.0578
Benzo(a)anthracene	0.16	0.15	2.9	2.9	<0.035	0.0225J	<0.035	<0.037	<0.037	<0.042	<0.035	<0.034	0.628	0.0582	NA	0.161
Benzo(a)pyrene	0.016	0.015	0.29	0.29	<0.0035	0.0197	<0.0035	0.00469	0.00417	0.00774	<0.0035	<0.0034	0.632	0.0391	NA	0.135J
Benzo(b)fluoranthene	0.16	0.15	2.9	2.9	<0.035	0.0311J	<0.035	<0.037	<0.037	<0.042	<0.035	<0.034	0.857	0.0774	NA	0.216
Benzo(g,h,i)perylene	---	2500	---	52000	<0.035	0.0189J	<0.035	<0.037	<0.037	<0.042	<0.035	<0.034	0.557	0.0383J	NA	0.104
Benzo(k)fluoranthene	1.6	1.5	29	29	<0.035	<0.036	<0.035	<0.037	<0.037	<0.042	<0.035	<0.034	0.278	<0.042	NA	0.0624
Chrysene	16	15	290	290	<0.035	0.0226J	<0.035	<0.037	<0.037	<0.042	<0.035	<0.034	0.62	0.0882	NA	0.168
Dibenz(a,h)anthracene	0.016	---	0.29	---	<0.0035	<0.0036	<0.0035	<0.0037	<0.0037	<0.0042	<0.0035	<0.0034	0.0932	0.00785	NA	0.0232J
Fluoranthene	2400	230	30000	3000	<0.035	0.037	<0.035	<0.037	<0.037	<0.042	<0.035	<0.034	1.25	0.113	NA	0.397
Fluorene	2400	230	30000	3000	<0.035	<0.036	<0.035	<0.037	<0.037	<0.042	<0.035	<0.034	0.0346J	<0.042	NA	0.0224J
Indeno(1,2,3-cd)pyrene	0.16	---	2.9	---	<0.035	0.0211J	<0.035	<0.037	<0.037	<0.042	<0.035	<0.034	0.556	0.0371J	NA	0.107
Naphthalene	3.8	3.8	17	17	<0.035	<0.036	<0.035	<0.037	<0.037	<0.042	<0.035	<0.034	0.129	0.0272J	NA	<0.038
Phenanthrene	---	2100	---	4300	<0.035	0.0172J	<0.035	<0.037	<0.037	<0.042	<0.035	<0.034	0.661	0.0631	NA	0.292
Pyrene	1800	170	23000	2300	<0.035	0.0338J	<0.035	<0.037	<0.037	<0.042	<					

Table 31
Onsite Surface Soil Sample Results - January 2017

Parameter	Residential Soil		Industrial Soil		Former Tank Farm Area			Former Brule Incinerator Area			Building 5 Area		Background Locations			
	USEPA RSL	PREQB ¹	USEPA RSL	PREQB ¹	FTFSS-1 1/25/2017	FTFSS-2 1/25/2017	FTFSS-3 1/25/2017	BRSS-1 1/25/2017	BRSS-1 DUP 1/25/2017	BRSS-2 1/25/2017	B5SS-1 1/25/2017	B5SS-2 1/25/2017	BKGSS-1 1/26/2017	BKGSS-2 1/26/2017	BKGSS-2 DUP 1/26/2017	BKGSS-3 1/26/2017
2,4-Dichlorophenol	190	---	2500	---	<0.18	<0.18	<0.17	<0.18	<0.19	<0.21	<0.17	<0.17	<0.19	<0.21	NA	<0.19
2,4-Dimethylphenol	1300	---	16000	---	<0.18	<0.18	<0.17	<0.18	<0.19	<0.21	<0.17	<0.17	<0.19	<0.21	NA	<0.19
2,4-Dinitrophenol	130	---	1600	---	<0.18	<0.18	<0.17	<0.18	<0.19	<0.21	<0.17	<0.17	<0.19	<0.21	NA	<0.19
2,4-Dinitrotoluene	1.7	---	7.4	---	<0.035	<0.036	<0.035	<0.037	<0.037	<0.042	<0.035	<0.034	<0.039	<0.042	NA	<0.038
2,6-Dinitrotoluene	0.36	---	1.5	---	<0.035	<0.036	<0.035	<0.037	<0.037	<0.042	<0.035	<0.034	<0.039	<0.042	NA	<0.038
2-Chloronaphthalene	4800	---	60000	---	<0.071	<0.073	<0.069	<0.074	<0.075	<0.083	<0.069	<0.069	<0.077	<0.083	NA	<0.077
2-Chlorophenol	390	---	5800	---	<0.071	<0.073	<0.069	<0.074	<0.075	<0.083	<0.069	<0.069	<0.077	<0.083	NA	<0.077
2-Methylphenol	3200	---	41000	---	<0.071	<0.073	<0.069	<0.074	<0.075	<0.083	<0.069	<0.069	<0.077	<0.083	NA	<0.077
2-Nitroaniline	630	---	8000	---	<0.18	<0.18	<0.17	<0.18	<0.19	<0.21	<0.17	<0.17	<0.19	<0.21	NA	<0.19
2-Nitrophenol	---	---	---	---	<0.18	<0.18	<0.17	<0.18	<0.19	<0.21	<0.17	<0.17	<0.19	<0.21	NA	<0.19
3&4-Methylphenol ³	3200	---	41000	---	<0.071	<0.073	<0.069	<0.074	<0.075	<0.083	<0.069	<0.069	<0.077	<0.083	NA	<0.077
3,3'-Dichlorobenzidine	1.2	---	5.1	---	<0.071	<0.073	<0.069	<0.074	<0.075	<0.083	<0.069	<0.069	<0.077	<0.083	NA	<0.077
3-Nitroaniline	---	---	---	---	<0.18	<0.18	<0.17	<0.18	<0.19	<0.21	<0.17	<0.17	<0.19	<0.21	NA	<0.19
4,6-Dinitro-2-methylphenol	5.1	---	66	---	<0.18	<0.18	<0.17	<0.18	<0.19	<0.21	<0.17	<0.17	<0.19	<0.21	NA	<0.19
4-Bromophenyl Phenyl Ether	---	---	---	---	<0.071	<0.073	<0.069	<0.074	<0.075	<0.083	<0.069	<0.069	<0.077	<0.083	NA	<0.077
4-Chloro-3-Methylphenol	6300	---	82000	---	<0.18	<0.18	<0.17	<0.18	<0.19	<0.21	<0.17	<0.17	<0.19	<0.21	NA	<0.19
4-Chloroaniline	2.7	---	11	---	<0.18	<0.18	<0.17	<0.18	<0.19	<0.21	<0.17	<0.17	<0.19	<0.21	NA	<0.19
4-Chlorophenyl Phenyl Ether	---	---	---	---	<0.071	<0.073	<0.069	<0.074	<0.075	<0.083	<0.069	<0.069	<0.077	<0.083	NA	<0.077
4-Nitroaniline	27	---	110	---	<0.18	<0.18	<0.17	<0.18	<0.19	<0.21	<0.17	<0.17	<0.19J	<0.21J	NA	<0.19J
4-Nitrophenol	---	---	---	---	<0.35	<0.36	<0.35	<0.37	<0.37	<0.42	<0.35	<0.34	<0.39	<0.42	NA	<0.38
Acetophenone	7800	---	120000	---	<0.18	<0.18	<0.17	<0.18	<0.19	<0.21	<0.17	<0.17	<0.19	<0.21	NA	0.0189J
Atrazine	2.4	---	10	---	<0.071	<0.073	<0.069	<0.074	<0.075	<0.083	<0.069	<0.069	<0.077	<0.083	NA	<0.077
Benzaldehyde	170	---	820	---	<0.18	<0.18	0.0235J	0.026J	0.0418J	0.0391J	0.0393J	0.0182J	0.0316J	0.0524J	NA	0.0479J
Bis(2-chloro-1-methylethyl)ether	3100	---	47000	---	<0.071	<0.073	<0.069	<0.074	<0.075	<0.083	<0.069	<0.069	<0.077	<0.083	NA	<0.077
Bis(2-chloroethoxy)methane	190	---	2500	---	<0.071	<0.073	<0.069	<0.074	<0.075	<0.083	<0.069	<0.069	<0.077	<0.083	NA	<0.077
Bis(2-chloroethyl)ether	0.23	---	1	---	<0.071	<0.073	<0.069	<0.074	<0.075	<0.083	<0.069	<0.069	<0.077	<0.083	NA	<0.077
Bis(2-ethylhexyl)phthalate	39	---	160	---	<0.071	0.0539J	0.146	<0.074	<0.075	<0.083	<0.069	<0.069	<0.077	<0.083	NA	<0.077
Butyl benzyl phthalate	290	---	1200	---	<0.071	<0.073	0.104	<0.074	<0.075	<0.083	<0.069	<0.069	<0.077	<0.083	NA	<0.077
Caprolactam	31000	---	400000	---	<0.071	<0.073	<0.069	<0.074	<0.075	<0.083	<0.069	<0.069	<0.077	<0.083	NA	<0.077
Carbazole	---	---	---	---	<0.071	<0.073	<0.069	<0.074	<0.075	<0.083	<0.069	<0.069	0.0859	<0.083	NA	0.0416J
Dibenzofuran	73	---	1000	---	<0.071	<0.073	<0.069	<0.074	<0.075	<0.083	<0.069	<0.069	0.021J	<0.083	NA	0.0218J
Diethyl Phthalate	51000	---	660000	---	<0.071	<0.073	<0.069	<0.074	<0.075	<0.083	<0.069	<0.069	<0.077	<0.083	NA	<0.077
Dimethyl Phthalate	---	---	---	---	<0.071	<0.073	<0.069	<0.074	<0.075	<0.083	0.0663J	<0.069	<0.077	<0.083	NA	<0.077
Di-n-butyl Phthalate	6300	---	82000	---	<0.071	<0.073	<0.069	<0.074	<0.075	<0.083	<0.069	<0.069	<0.077	<0.083	NA	<0.077
Di-n-octyl Phthalate	630	---	8200	---	<0.071	<0.073	<0.069	<0.074	<0.075	<0.083	<0.069	<0.069	<0.077	<0.083	NA	<0.077
Hexachlorobenzene	0.21	---	0.96	---	<0.071	<0.073	<0.069	<0.074	<0.075	<0.083	<0.069	<0.069	<0.077	<0.083	NA	<0.077
Hexachlorocyclopentadiene	1.8	---	7.5	---	<0.35	<0.36	<0.35	<0.37	<0.37	<0.42	<0.35	<0.34	<0.39	<0.42	NA</td	

Table 31
Onsite Surface Soil Sample Results - January 2017

Parameter	Residential Soil		Industrial Soil		Former Tank Farm Area			Former Brule Incinerator Area			Building 5 Area		Background Locations			
	USEPA RSL	PREQB ¹	USEPA RSL	PREQB ¹	FTFSS-1 1/25/2017	FTFSS-2 1/25/2017	FTFSS-3 1/25/2017	BRSS-1 1/25/2017	BRSS-1 DUP 1/25/2017	BRSS-2 1/25/2017	B5SS-1 1/25/2017	B5SS-2 1/25/2017	BKGSS-1 1/26/2017	BKGSS-2 1/26/2017	BKGSS-2 DUP 1/26/2017	BKGSS-3 1/26/2017
Endosulfan II ⁵	470	---	7000	---	<0.00069	<0.00072	<0.0007	NA	NA	NA	<0.00068	<0.00067	<0.00076	<0.00084	<0.00084	<0.00076
Endosulfan Sulfate ⁵	470	---	7000	---	<0.00069	<0.00072	<0.0007	NA	NA	NA	<0.00068	<0.00067	<0.00076	<0.00084	<0.00084	<0.00076
Endrin	19	---	250	---	<0.00069	<0.00072	<0.0007	NA	NA	NA	<0.00068	<0.00067	<0.00076	<0.00084	<0.00084	<0.00076
Endrin Aldehyde	---	---	---	---	<0.00069	<0.00072	<0.0007	NA	NA	NA	<0.00068	<0.00067	<0.00076	<0.00084	<0.00084	<0.00076
Endrin Ketone	---	---	---	---	<0.00069	<0.00072	<0.0007	NA	NA	NA	<0.00068	<0.00067	<0.00076	<0.00084	<0.00084	<0.00076
gamma-Chlordane ⁴	1.7	---	7.7	---	<0.00069	<0.00072	<0.0007	NA	NA	NA	0.00031J	<0.00067	<0.00076	<0.00084	<0.00084	<0.00076
Heptachlor	0.13	---	0.63	---	<0.00069	<0.00072	0.00069J	NA	NA	NA	<0.00068	<0.00067	<0.00076	<0.00084	<0.00084	<0.00076
Heptachlor Epoxide	0.07	---	0.33	---	<0.00069	<0.00072	<0.0007	NA	NA	NA	<0.00068	<0.00067	<0.00076	<0.00084	<0.00084	<0.00076
Methoxychlor	320	---	4100	---	<0.0014	<0.0014	<0.0014	NA	NA	NA	<0.0014	<0.0013	<0.0015	<0.0017	<0.0017	<0.0015
Toxaphene	0.49	---	2.1	---	<0.017	<0.018	<0.017	NA	NA	NA	<0.017	<0.017	<0.019	<0.021	<0.019	
α -BHC	0.086	---	0.36	---	<0.00069	<0.00072	<0.0007	NA	NA	NA	<0.00068	<0.00067	<0.00076	<0.00084	<0.00084	<0.00076
β -BHC	0.3	---	1.3	---	<0.00069	<0.00072	<0.0007	NA	NA	NA	<0.00068	<0.00067	<0.00076	<0.00084	<0.00084	<0.00076
γ -BHC (Lindane)	0.57	---	2.5	---	<0.00069	<0.00072	<0.0007	NA	NA	NA	<0.00068	<0.00067	<0.00076	<0.00084	<0.00084	<0.00076
δ -BHC	---	---	---	---	<0.00069	<0.00072	<0.0007	NA	NA	NA	<0.00068	<0.00067	<0.00076	<0.00084	<0.00084	<0.00076
Metals Analytical Results (mg/kg)																
Aluminum	77000	---	1100000	---	NA	NA	NA	11900	13000	22700	NA	NA	21800	18000	NA	17000
Antimony	31	---	470	---	NA	NA	NA	0.42J	<2.2	<2.5	NA	NA	0.39J	0.63J	NA	0.7J
Arsenic	0.68	---	3	---	NA	NA	NA	5.3	5.4	5.2	NA	NA	2J	1.6J	NA	1.8J
Barium	15000	---	220000	---	NA	NA	NA	92.9	107	116	NA	NA	113	98.9	NA	97.5
Beryllium	160	---	2300	---	NA	NA	NA	0.25	0.25	0.25	NA	NA	0.21J	0.16J	NA	0.16J
Cadmium	71	---	980	---	NA	NA	NA	0.66	0.73	0.29J	NA	NA	0.14J	0.16J	NA	0.17J
Calcium	---	---	---	---	NA	NA	NA	2200	2500	4130	NA	NA	6510	10000	NA	5110
Chromium	---	---	---	---	NA	NA	NA	9.6	16.4	16.1	NA	NA	11.9	20.4	NA	12.6
Cobalt	23	---	350	---	NA	NA	NA	5.6J	6.5	11.5	NA	NA	15.2	13.3	NA	10.8
Copper	3100	---	47000	---	NA	NA	NA	20	22.3	48.8	NA	NA	39.2	38.3	NA	35.3
Iron	55000	---	820000	---	NA	NA	NA	16000	18100	25500	NA	NA	35600	29200	NA	27200
Lead	400	400	800	800	NA	NA	NA	13.2	14.2	8.8	NA	NA	7.7	9.2	NA	29
Magnesium	---	---	---	---	NA	NA	NA	1410	1710	3110	NA	NA	7630	7230	NA	4820
Manganese	1800	---	26000	---	NA	NA	NA	432	512	625	NA	NA	873	797	NA	621
Mercury	11	---	46	---	NA	NA	NA	0.14	0.33	0.037	NA	NA	0.031J	0.05	NA	0.1
Nickel	1500	---	22000	---	NA	NA	NA	3.7J	8	6.9	NA	NA	5.5	13.5	NA	6.2
Potassium	---	---	---	---	NA	NA	NA	735J	891J	665J	NA	NA	1580	2210	NA	1180
Selenium	390	---	5800	---	NA	NA	NA	<2.3	0.63J	0.75J	NA	NA	<2.2	<2.5	NA	<2.2
Silver	390	---	5800	---	NA	NA	NA	0.31	0.26J	0.52J	NA	NA	<1.1	<0.63	NA	<0.55
Sodium	---	---	---	---	NA	NA	NA	73.3J	83.8J	206J	NA	NA	353J	144J	NA	183J
Thallium	0.78	---	12	---	NA	NA	NA	<1.1	0.45J	1.1J	NA	NA	<1.1	<1.3	NA	<1.1
Vanadium	390	---	5800	---	NA	NA	NA	44.8	52	85.9	NA	NA	94.3	81.8	NA	81.3
Zinc	23000	---	350000	---	NA	NA	NA	121	129	61.1	NA	NA	139	129	NA	85.1

Notes:

(a) Identified as a suspected laboratory contaminant by the laboratory.

(b) Result is from SW 846 Method 8260C. All other 1,4-Dioxane results are based on SW 846 Method 8270D SIM

¹ December 2014 PREQB Regulation for the Control of Underground Storage Tanks.

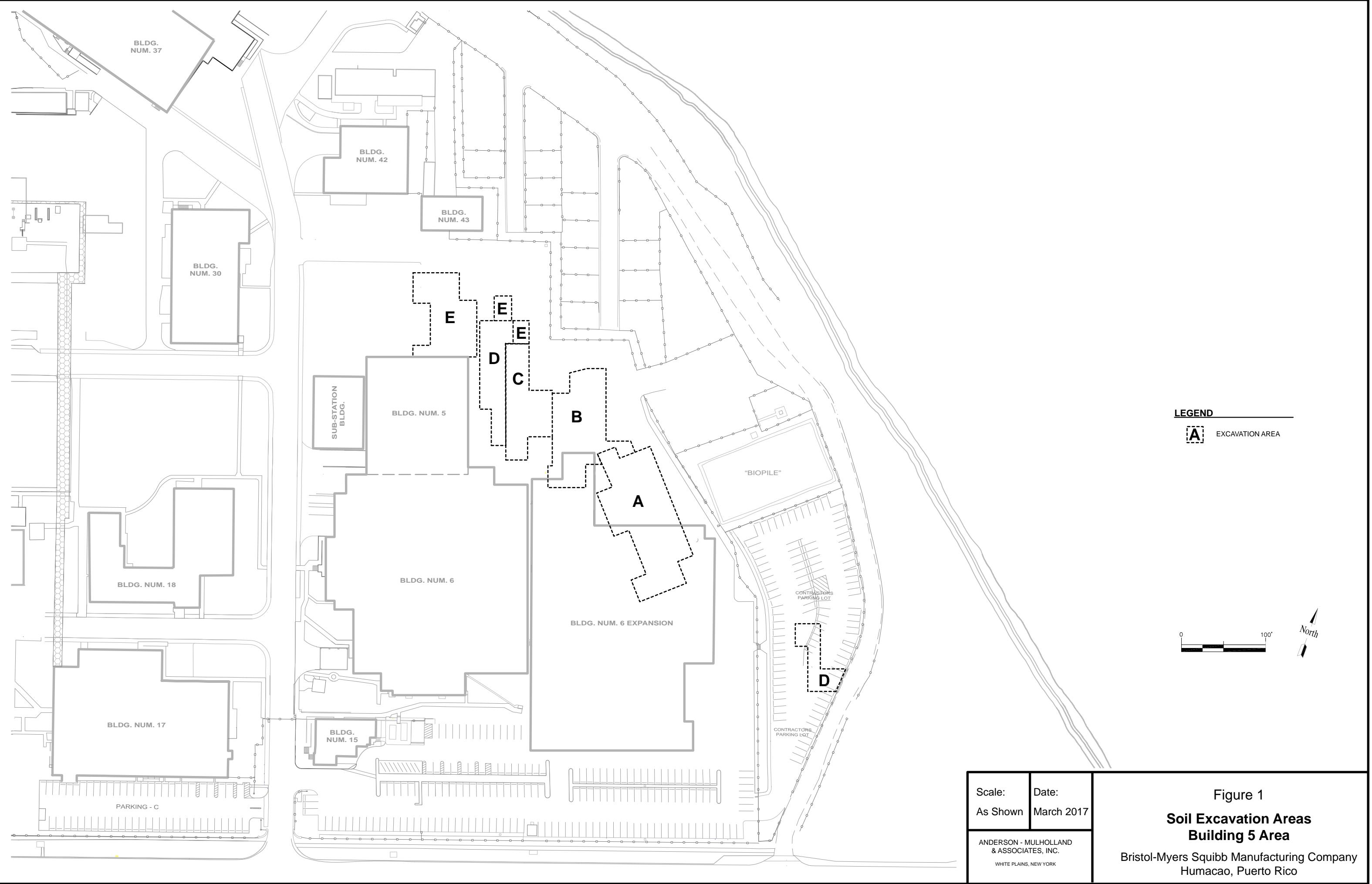
² USEPA RSL is for 1,3-Dichloropropene. The USEPA has not specifically established soil RSLs for cis-1,3-Dichloropropene or trans-1,3-Dichloropropene.

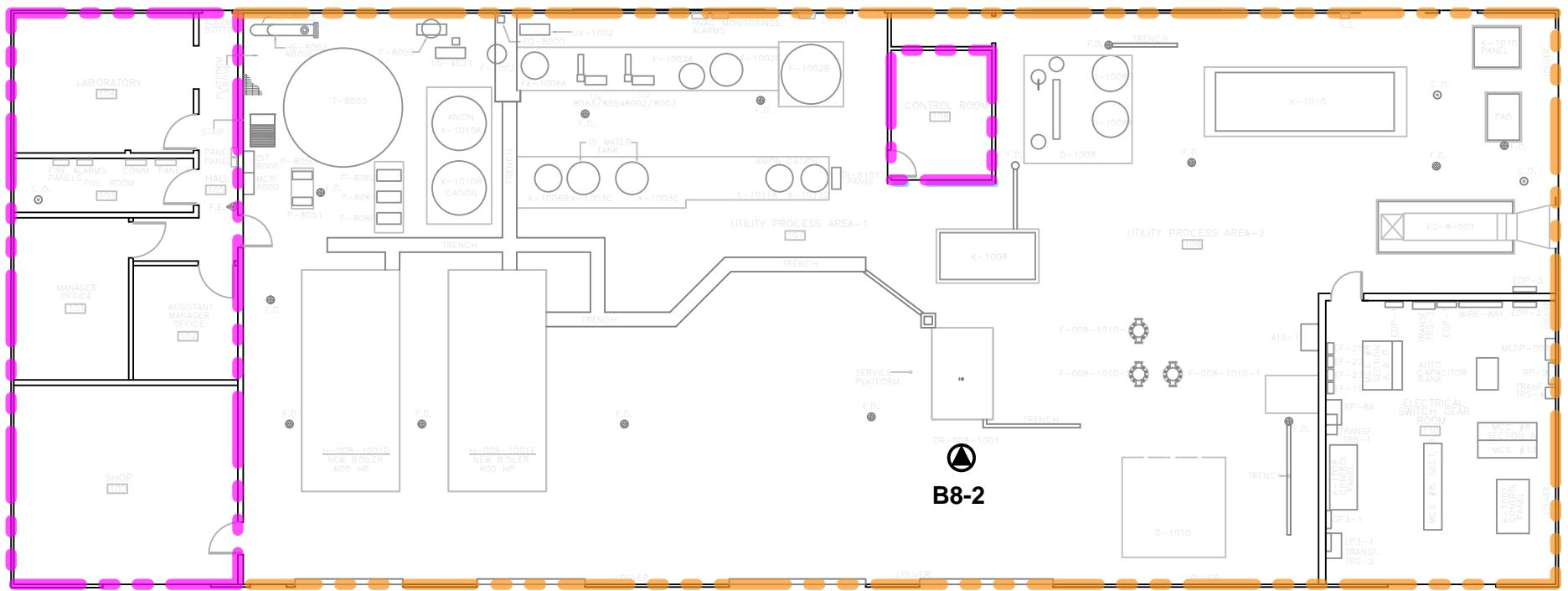
³ USEPA RSL applied to 3 & 4 methylphenol is the USEPA RSL for 3-methylphenol. This is a conservative level; it is lower than the USEPA RSL for 4-methylphenol.

⁴ USEPA RSL is for Chlordane. The USEPA has not specifically established soil RSLs for alpha-Chlordane or gamma-Chlordane.

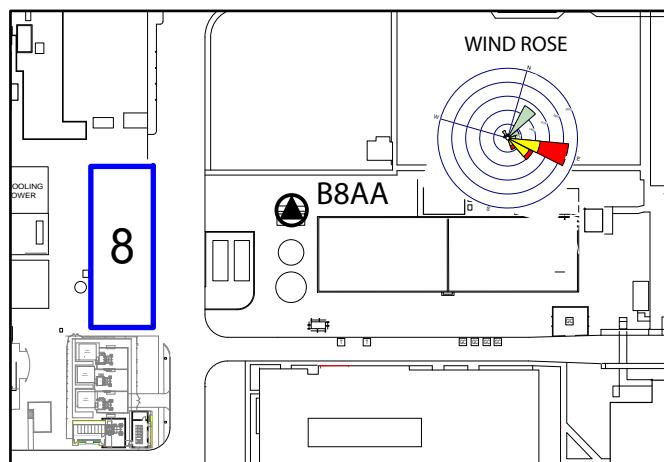
⁵ USEPA RSL is for Endosulfan. The USEPA has not specifically established soil RSLs for Endosulfan-I, Endosulfan-II, or Endosulfan Sulfate.

Figures



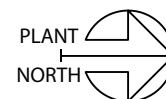


AMBIENT AIR SAMPLE LOCATION



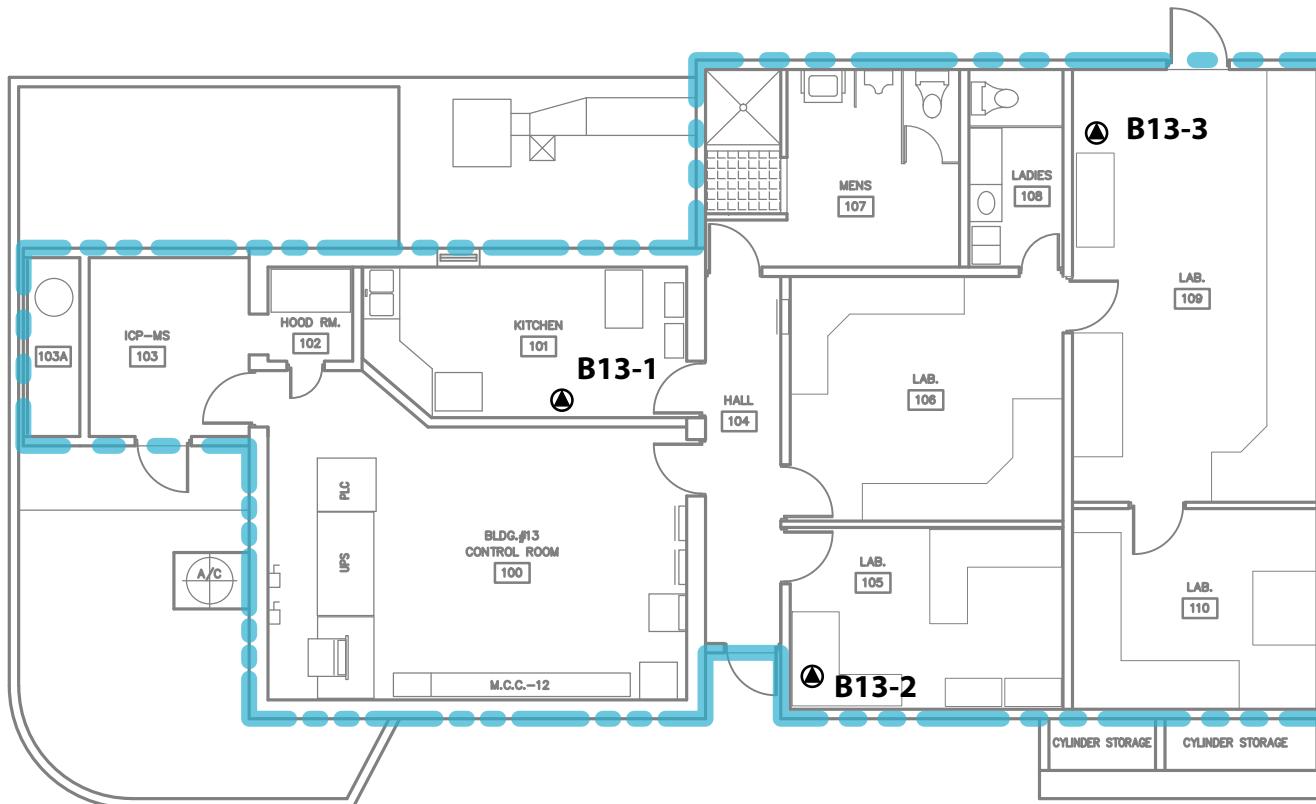
LEGEND

- Co-Located Indoor Air and Sub-Slab Soil Gas Sample Location
- Area Served by Dedicated Air Conditioner
- Area Ventilated by Exhaust Fans

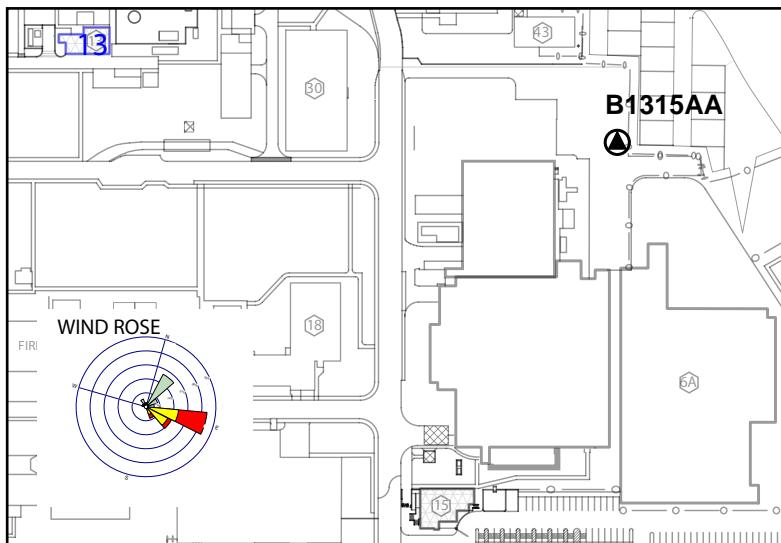


Scale: As Shown	Date: Apr 2017
ANDERSON - MULHOLLAND & ASSOCIATES, INC.	
PURCHASE, NEW YORK	

Figure 2
Building 8 Layout and
Vapor Intrusion Sampling Locations
Bristol-Myers Squibb Manufacturing Company
Humacao, Puerto Rico



AMBIENT AIR SAMPLE LOCATION



Legend

Ⓐ Co-Located Indoor Air and Sub-Slab Soil Gas Sample Location



HVAC Zone



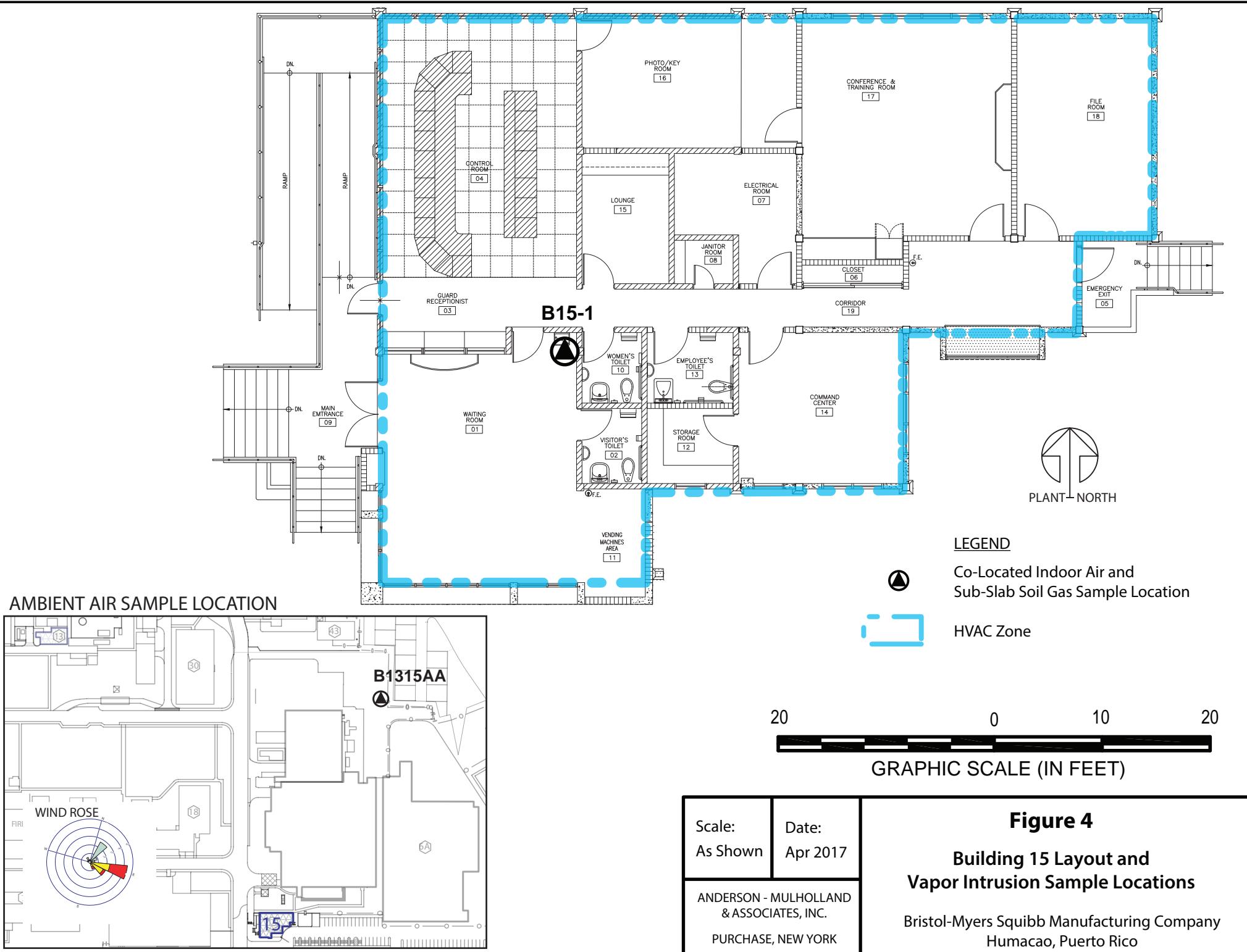
PLANT-NORTH

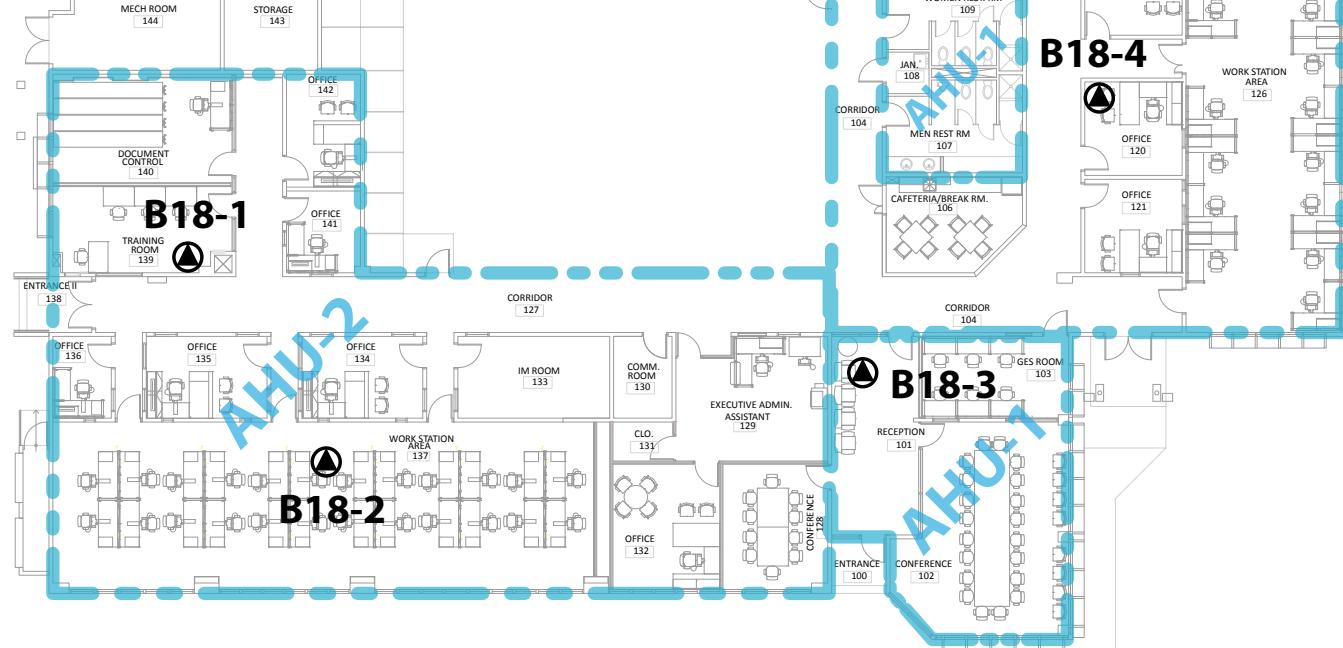
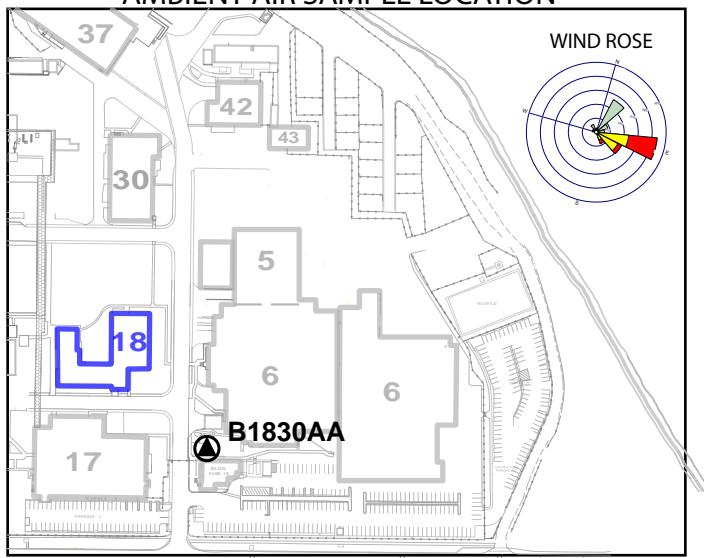
1' 0 1' 2' 5' 10'
 SCALE: 1/4"=1'-0"

Scale: As Shown	Date: Apr 2017
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PURCHASE, NEW YORK	

Figure 3

Building 13 Layout and Vapor Intrusion Sampling Locations
 Bristol-Myers Squibb Manufacturing Company
 Humacao, Puerto Rico





PLANT NORTH

5' 0 10' 20'



HVAC Zone/HVAC ID

Legend

- Co-Located Indoor Air and Sub-Slab Soil Gas Sample Location



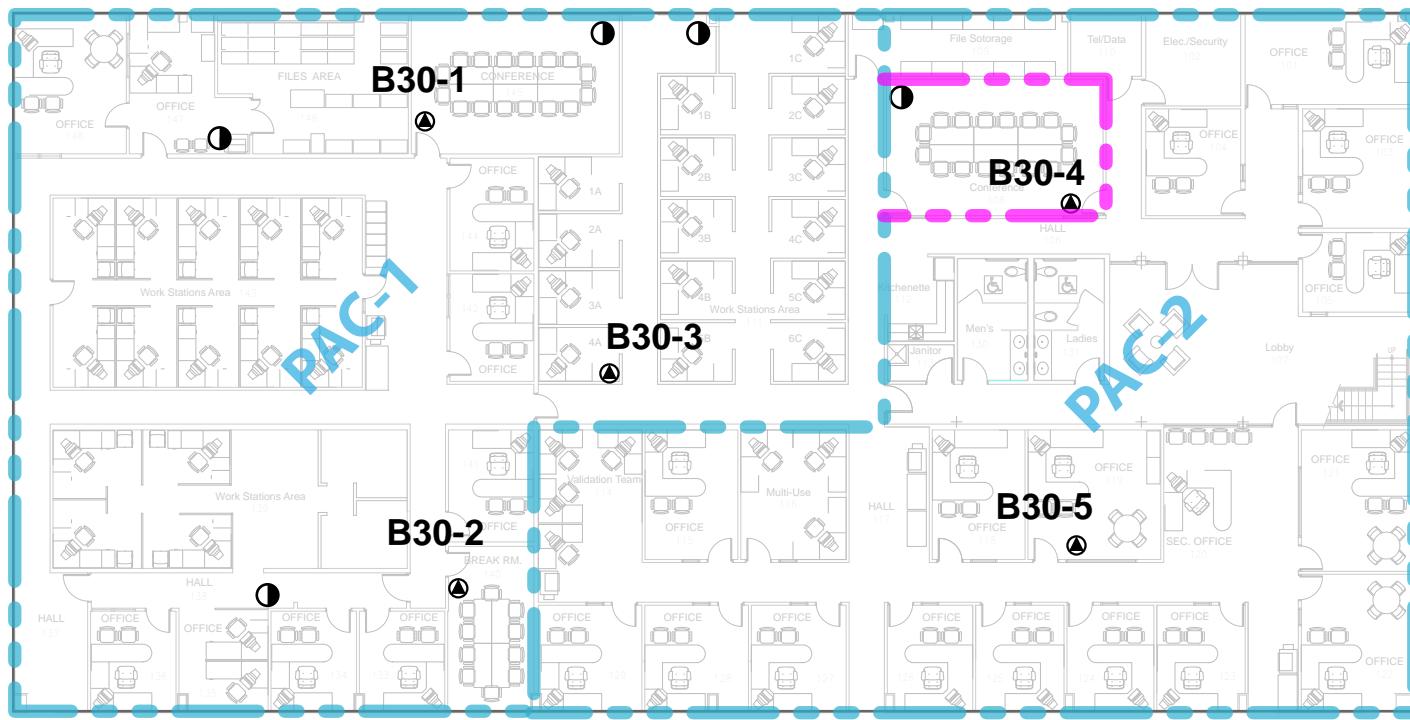
HVAC Zone/HVAC ID

Scale: As Shown	Date: Jul 2016
ANDERSON - MULHOLLAND & ASSOCIATES, INC. PURCHASE, NEW YORK	

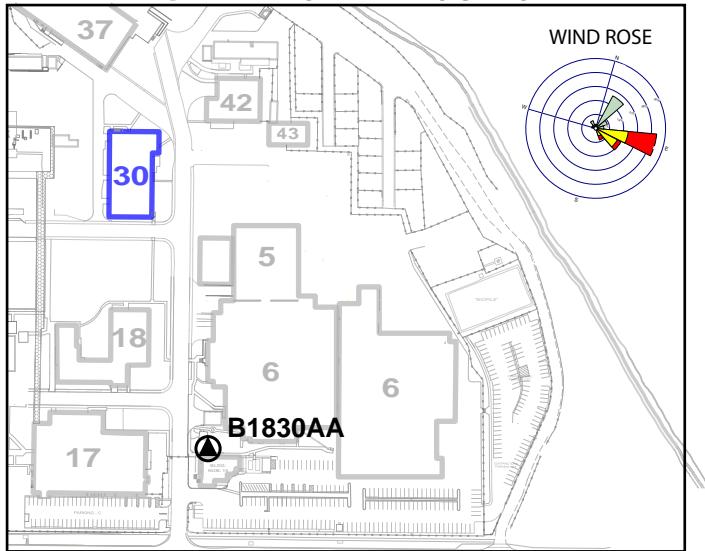
Figure 5

Building 18 Layout and Vapor Intrusion Sampling Locations

Bristol-Myers Squibb Manufacturing Company
Humacao, Puerto Rico

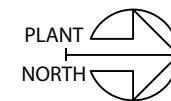


AMBIENT AIR SAMPLE LOCATION



LEGEND

- Ⓐ Co-Located Indoor Air and Sub-Slab Sample Location
- Location of Aller Air Carbon Unit
- HVAC Zone/ HVAC ID
- Area Served by Portable Air Conditioner



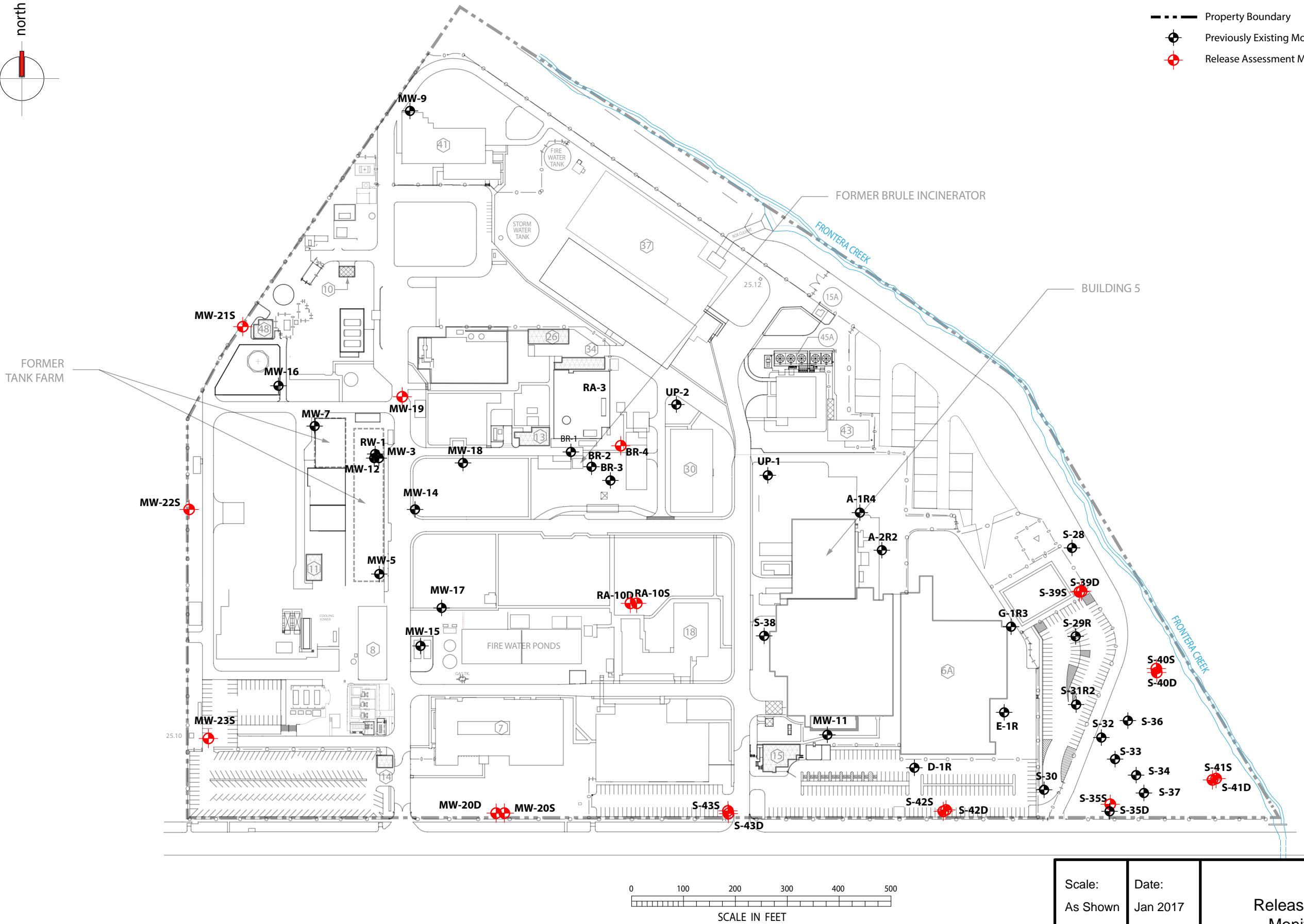
20
0
10
20
GRAPHIC SCALE (IN FEET)

Scale: As Shown	Date: Apr 2017
ANDERSON - MULHOLLAND & ASSOCIATES, INC. PURCHASE, NEW YORK	

Figure 6
Building 30 Layout and
Vapor Intrusion Sample Locations

Bristol-Myers Squibb Manufacturing Company
Humacao, Puerto Rico

north

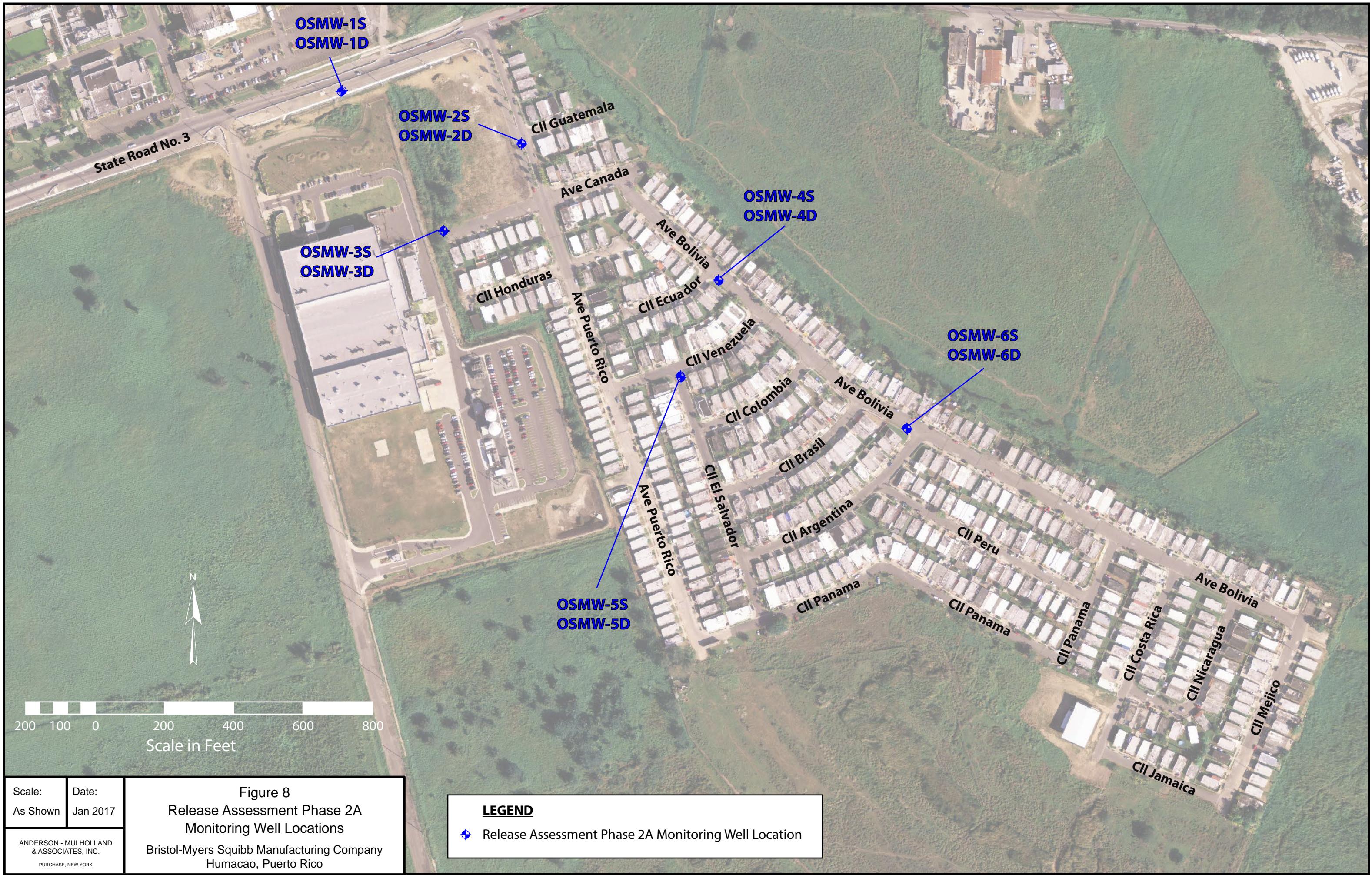


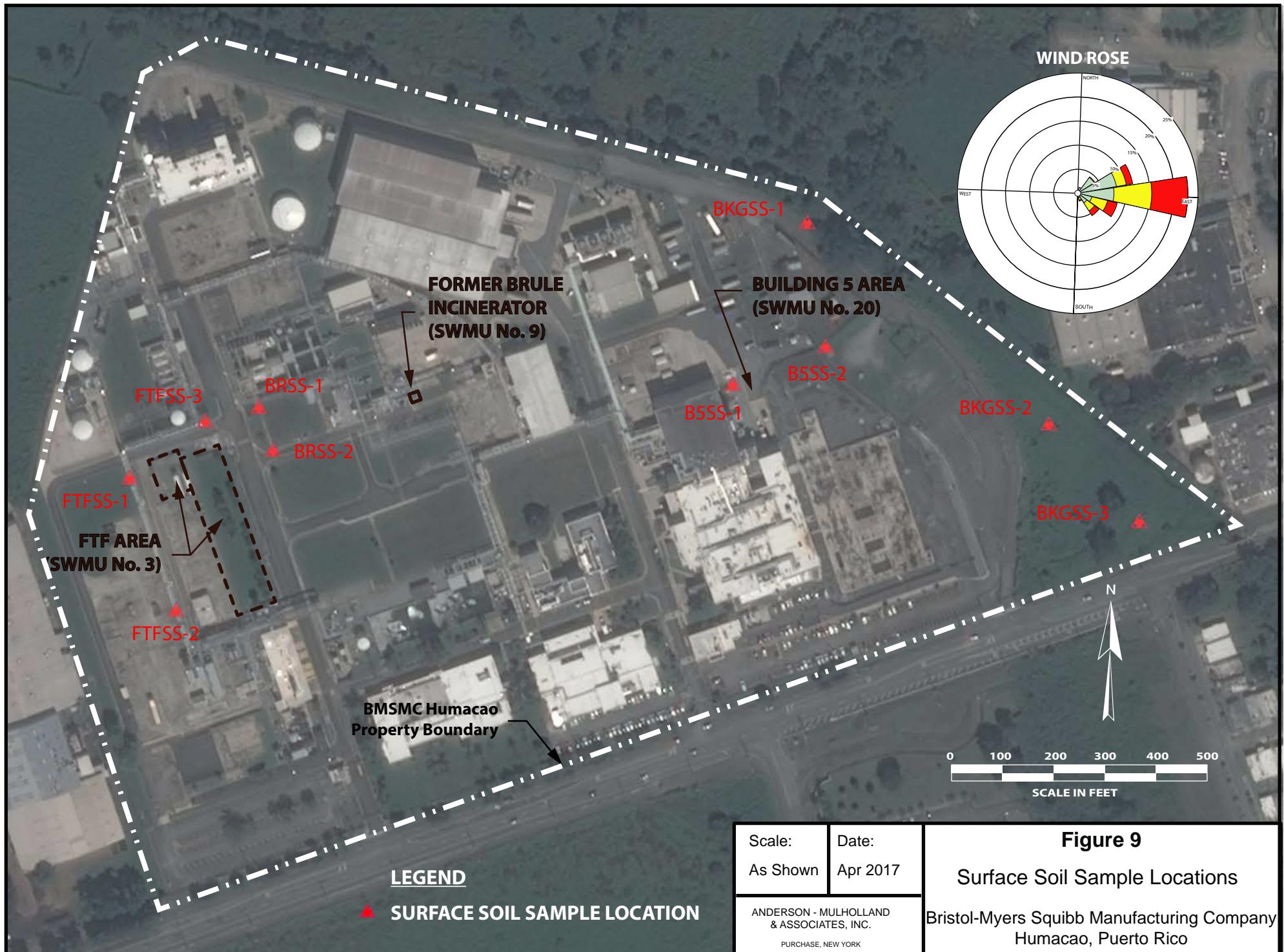
Scale:
As Shown

Date:
Jan 2017

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& ASSOCIATES, INC.
PURCHASE, NEW YORK

Figure 7
Release Assessment Phase 1
Monitoring Well Locations
Bristol-Myers Squibb Manufacturing Company
Humacao, Puerto Rico





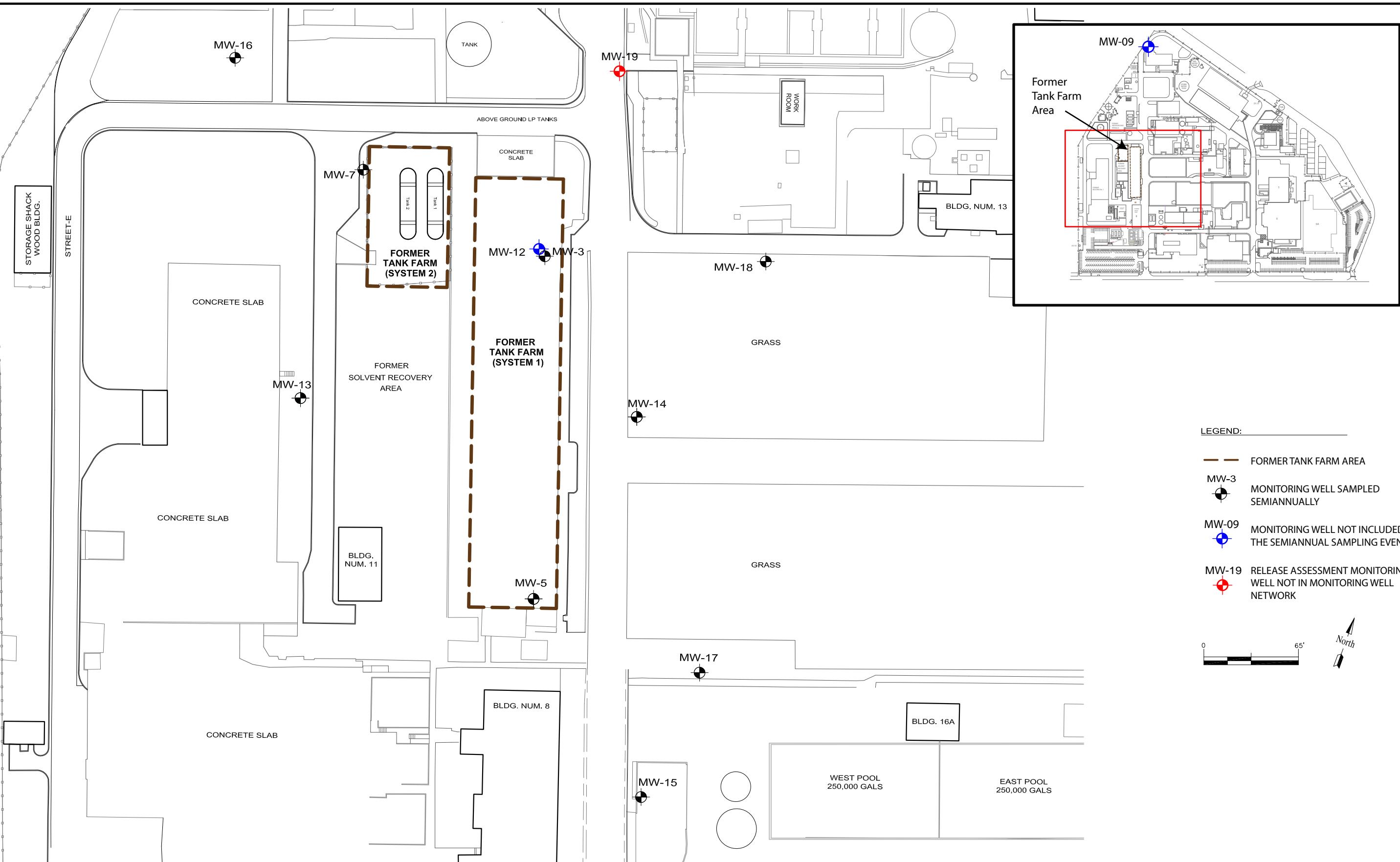
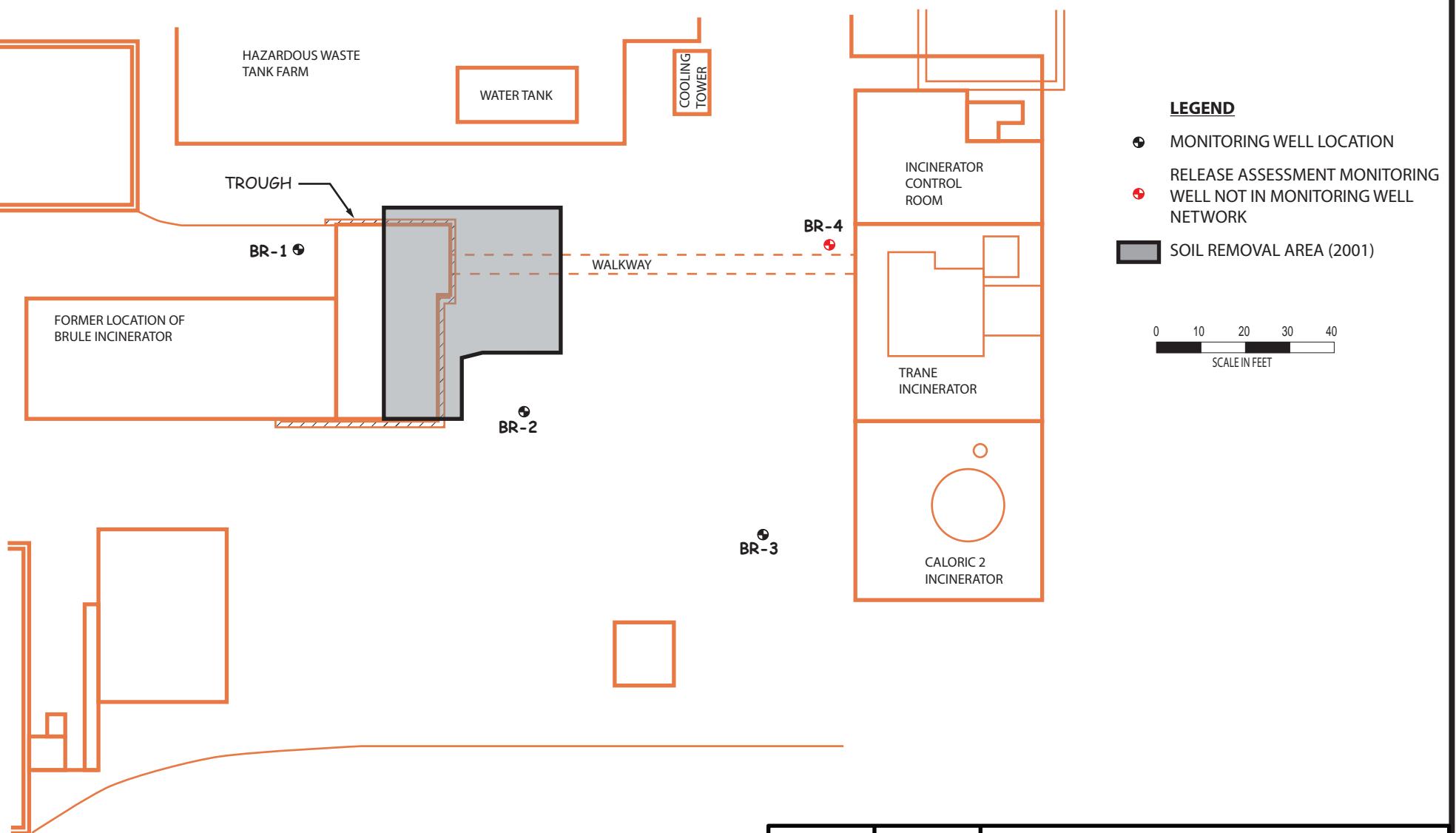


Figure 10
Location of Groundwater Monitoring Wells
Former Tank Farm Area

Bristol-Myers Squibb Manufacturing Company
Humacao, Puerto Rico

Scale	Date
	Jul 2016

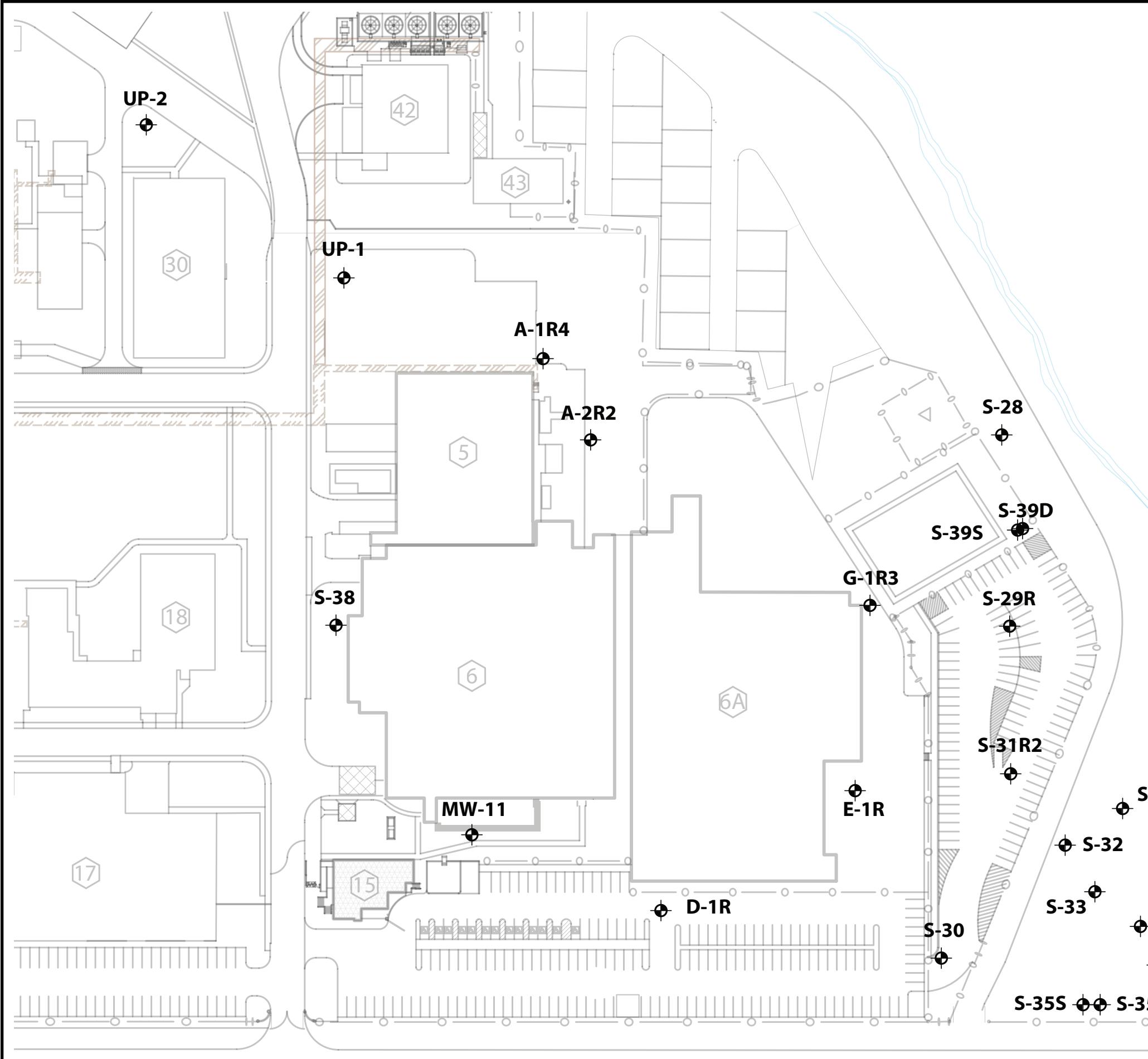
ANDERSON - MULHOLLAND & ASSOCIATES, INC.
WHITE PLAINS, NEW YORK
SAN JUAN, PUERTO RICO



Scale: As Shown	Date: Jul 2016
ANDERSON - MULHOLLAND & ASSOCIATES, INC. PURCHASE, NEW YORK	

Figure 11
Location of Groundwater Monitoring Wells
Brule Area

Bristol-Myers Squibb Manufacturing Company
Humacao, Puerto Rico



LEGEND

MONITORING WELL CURRENTLY
SAMPLED QUARTERLY

0 50 100 150 200 250
SCALE IN FEET



Scale: As Shown	Date: Apr 2017
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PURCHASE, NEW YORK	

Figure 12
**Location of Monitoring Wells
Building 5 Area**

Bristol-Myers Squibb Manufacturing Company
Humacao, Puerto Rico

Attachments (on CD)

Attachment A:

January 2017 Vapor Intrusion Results and Data Validation Reports

Attachment B:

4th Quarter 2016 Groundwater Analytical Results and Data Validation Reports

Attachment C:

4th Quarter 2016 Groundwater Field Data Sheets

Attachment D:

January 2017 Onsite Surface Soil Analytical Results and Data Validation Reports